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SUMMARY
OF THE
ADMINISTRATION
OF
THE EARL OF MINTO,
VICEROY AND GOVERNOR GENERAL OF INDIA,
IN THE
RAILWAY DEPARTMENT
(RAILWAY BOARD).
NOVEMBER 1905—JULY 1910.



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Map of India showing railways open and under construction corrected up to the 31st March 1910, and lines projected up to the 31st December 1909.	} In pocket attached to the cover.	

ADMINISTRATION
OF
THE EARL OF MINTO,
VICEROY AND GOVERNOR GENERAL OF INDIA,
IN THE
RAILWAY DEPARTMENT
(RAILWAY BOARD).

GENERAL.

Administration.—At the beginning of Lord Minto's Viceroyalty the administration of the railways in India was vested in the Railway Board, which consisted of a Chairman and two Members, outside of, but subordinate to, the Government of India.

On representations of the Indian Railway Companies and East India Merchants the Secretary of State intimated that he had appointed a Committee to enquire and report, among other matters, whether the system under which the Railway Board then worked was satisfactory or capable of improvement and to make recommendations.

The Committee so appointed, and known as the Railway Finance and Administration Committee, on the 5th March 1907 submitted their report to the Secretary of State, in accordance with whose decision thereon the administration of the railways in India continued to be vested in the Railway Board, consisting (from the 1st October 1908) of a President and two Members, who, with their staff, are collectively called the Railway Department of the Government of India, distinct from, and independent of, the Department of Commerce and Industry, though remaining in the administrative charge of the Honourable Member, Commerce and Industry Department, as Railway Member.

2. Additional powers given to the Railway Board.—In paragraphs 79 to 94 of Part I of the Summary of the administration of railways during the Viceroyalty of Lord Curzon, reference was made, among other matters, to the powers vested in the Railway Board. In December 1906 the Railway Board were further invested with full powers in the matter of agreements with Railway Companies for the construction of rolling-stock, plant or machinery used on, or in connection with, railways, or for leasing or taking on lease any rolling-stock, plant, machinery or equipments required for use on railways, or for the maintenance of rolling-stock, subject to the condition that the Railway Board shall, in the exercise of those powers, act in accordance with the general rules or orders on the subject passed from time to time by the Government of India.

3. Delegation to the Railway Board of the full powers of the Governor General in Council under section 50, clause (d), of the Indian Railways Act, 1890 (IX of 1890).—In April 1907 the Railway Board were invested with all the powers and functions of the Governor General in Council under section 50, clause (d), of the Indian Railways Act, 1890 (IX of 1890), subject to the condition that they shall, in the exercise of the said powers or functions, act in accordance with the general rules or orders on the subject passed from time to time by the Government of India.

In February 1908 the Board were further invested with the power exercised by the Governor General in Council under section 51 of the Indian Railways Act, 1890 (IX of 1890), subject to the same condition.

4. Government control of railways.—On the 1st January 1908 a new system of control of railways by the Government of India was introduced, as a result of which the appointments of Consulting Engineers were abolished and railways were placed under the direct control of the Railway Board. Original powers of sanction and administration were as a consequence delegated to the Boards of Directors of Railway Companies, with the option of delegating all or any of these powers to their Agents in India.

5 Expansion of the Railway Programme; Railway Finance Committee.—In paragraph 1 reference has been made to the Committee appointed in 1907 by the Secretary of State to make an investigation into, and report on, Indian Railway Finance and Administration, consequent upon representations of Indian Railway Companies and East India Merchants.

The Committee found that the allotments for railway construction and equipment were insufficient to meet the requirements of trade, and recommended, *inter alia*, an expenditure of £12,500,000, *i.e.*, 18·75 crores of rupees, per annum, for the following eight years, and that a standard of annual expenditure should be fixed periodically. They also proposed an extension of the powers of the Railway Board in order to bring it into closer connection with the Government of India. These recommendations have been carried out as far as possible.

So far it has not been found possible, for financial reasons, to allot more than 16·30 crores of rupees per annum for capital expenditure on railways. This was the amount allotted for 1910-11, and the Secretary of State has recently intimated that the Railway Programme for 1911-12 should be prepared on the same basis.

6. Secretary of State's ruling regarding the inclusion in the Railway Programme of lines financed by loans from Government.—In sanctioning the arrangements proposed for the construction of the Bezwada-Masulipatam railway,—which has been financed by the District Board of Kistna partially out of loans obtained through the Provincial Loan Account,—the Secretary of State pointed out that the authority delegated to the Government of India to sanction, outside the Programme, the construction of all lines having an Indian domicile and a rupee capital, does not apply to lines of this class as they will be financed partially out of funds provided by Government, and that the loan of Government money for railway construction by District Boards has the effect of reducing the amount available for State construction. Unless,

therefore, the lines thus financed are brought within [the Programme with a view to comparing their urgency with that of State projects, the practice of lending State funds for their construction might result in their being taken in hand to the exclusion of more urgently needed State lines, and he accordingly requested that all lines the expenditure for which is proposed to be provided by means of loans from the Government of India or Provincial Governments should be included in the Programme.

The Secretary of State has, however, in connection with the revision of the Branch Line Terms Resolution, No. 514-R.O. of 1896, accepted the proposal of the Government of India that guaranteed branch lines shall be shown in a separate part of the annual Programme, without coming into the list of works over which the proposed programme grant of the year is distributed.

7. Revision of the Branch Line Terms Resolution of 1896.—With a view to foster the construction of branch or feeder railways in India by private enterprise, the Government of India published a Resolution, No. 514 R.-C., dated the 17th April 1896, formulating the terms on which they were prepared to consider offers for the construction of such lines by private companies, in supersession of all previous rules on the subject. The chief feature of those terms was the financial assistance offered in one or other of the following forms :—

- (a) an absolute guarantee of interest, at a rate not exceeding 3 per cent per annum, on the actual capital expenditure of the Branch Company as entered in rupees in the Company's books in India, with such share of the surplus profits as may be agreed upon ;
- (b) a rebate to be paid out of, but not exceeding, the net earnings of the main line from traffic interchanged with the Branch as will, together with the net earnings of the Branch itself, suffice to give a dividend of $3\frac{1}{2}$ per cent per annum on the actual capital expenditure on the Branch as entered in rupees in the Company's books in India.

The publication of the resolution was followed by the construction, within the terms prescribed thereby, of only a few branch railways. The decision of the Secretary of State that all guaranteed branch lines, though financed by private companies, must be included in the annual Railway Programme, however, led the Government of India to discourage generally all proposals asking for a Government guarantee; and since important modifications of the terms of 1896, which had to be conceded before the negotiations could be brought to a successful issue, were in almost all cases demanded by private promoters, the conclusion was forced on Government that the above terms, though more liberal than those which preceded them, were not sufficiently attractive and that it would be necessary to offer further advantages in order to secure a steady flow of private capital towards railway investment.

The terms of 1896 were accordingly revised after careful consideration, and the following important modifications were recommended by the Railway Board, *viz* :—

- (i) Branch Companies to be granted, free of cost, land required for quarrying ballast, brickfields and similar purposes, for which the grant of free land had previously been inadmissible;

- (ii) both the guarantee and rebate conditions of 1896 to be materially improved by offering the Branch Company (a) a guarantee of 4 per cent per annum, or, as an alternative, (b) a rebate to be paid out of, but not exceeding, the net earnings of the main line from traffic interchanged with the Branch as will, together with the net earnings of the Branch itself, help the Branch Company to earn a dividend of 5 per cent per annum, subject to the condition that, in both cases, surplus profits will be divided equally between Government and the Company when the line earns over 5 per cent; and
- (iii) in addition to the ordinary conditions of purchase, special right to be reserved to Government for acquiring the Branch line, at any time on giving a year's notice during the currency of the contract, on payment of 25 times the average net earnings during the three years preceding the purchase, or 115 per cent of the capital expenditure on the line, whichever may be the greater.

The object of reserving the right to purchase the Branch lines at any time was to remove the objection, (which had more than once been raised by the Secretary of State), that the creation of numerous Branch Line Companies with separate interests from, and in some ways antagonistic to, the main lines might prove disadvantageous.

The revised terms were submitted for the Secretary of State's sanction, and the opportunity was taken to ask his approval to the proposal that guaranteed branch lines should be shewn in a separate part of the annual Programme without coming into the list of works over which the proposed programme grant of the year is distributed.

After some correspondence the Secretary of State sanctioned the revised terms recommended by the Government of India. He, however, reduced the rate of guarantee from 4 per cent to $3\frac{1}{2}$ per cent, and ruled that guaranteed lines must be constructed and worked on behalf of the Branch Line Companies by the agency of the main line concerned. He also desired that the Government of India's proposal to show guaranteed lines in a separate part of the Programme should apply to rebate-aided lines as well.

In regard to the right of special purchase of branch lines, the Secretary of State proposed that such right should only be exercised—

- (1) when a change of gauge is required;
- (2) when the branch line is to be converted into a line of through communication;
- (3) when it is desired to extend the branch line and the Company is unwilling to supply the necessary capital.

The revised Branch Line Terms Resolution, as sanctioned by the Secretary of State, was accordingly published on 23rd June 1910, and it is expected that the better terms now offered will be fully appreciated by the public and will encourage them to invest money in railway enterprise to a greater extent than before.

8. Histories of Railway Projects.—Amongst the changes introduced in 1899 in the system of dealing with the question of railway extension in India was the publication of an annual compilation, for sale to the public, entitled "Histories of Railway Projects." It contained a short account of each railway project considered, with an indication of the policy to be adopted with regard to its construction and working. The object was to afford information to promoters and others interested in railway construction, in order to enable them to form a judgment as to the extent and form in which offers for the construction and working of particular lines were likely to be acceptable to Government. In 1900 the particulars regarding tramways outside municipal limits were, for the first time, included in the Histories, and since 1901 the indication of policy above alluded to has been discontinued, in view of the possibility of some of the railways hitherto reserved for State construction being given up to private enterprise in case suitable offers for their construction are received. With these modifications this publication was issued annually; but His Excellency the Earl of Minto decided that, from 1907, its issue as a separate compilation should be discontinued, and that such particulars regarding projected lines as may be considered of sufficient interest to the general public and possible promoters should be incorporated, in tabular form, as an appendix to the annual Administration Report on the Railways in India.

The above decision was reported to the Secretary of State and the "Histories," corrected up to 31st December of each year, now issue annually as an appendix to the Administration Report on the Railways in India.

9. Guarantee by Provincial Governments for railways of local interest.—In 1904 the Government of India addressed the Secretary of State in regard to a scheme which they put forward with a view to promoting railway construction outside their ordinary Programme of Railway Construction. The proposals were that Local Governments with whom quasi-permanent Provincial Settlements have been concluded should be authorized, subject to certain conditions, to guarantee interest on lines of local value which are indefinitely delayed by having to await a place in the Programme, and that the lines so guaranteed should be held to be an addition to the Government of India Programme.

The conditions and restrictions under which the scheme was proposed to be worked are that—

- (i) the previous sanction of the Government of India shall be obtained in each case;
- (ii) guarantees may be granted only by Local Governments with whom quasi-permanent Provincial Settlements have been made;
- (iii) guarantees may be given only in respect of railways which, in the opinion of the Government of India, are purely local in character;
- (iv) no single guarantee shall be given by any Local Government for a sum in excess of an amount to be fixed for that province by the Government of India; and the amount of any new guarantee which it may be proposed to grant, together with the average payments under existing guarantees, during the three preceding years, shall also be limited to a sum to be fixed for each province by the Government of India;

(v) all guarantees shall be conditional on the railway being opened for traffic and the service being properly maintained.

The Secretary of State, before coming to a decision as regards Companies having an Indian domicile and a rupee capital, referred certain points for consideration, and also desired that the views of the Local Governments and of the Railway Board might be obtained on the scheme. He at the same time intimated that, even if the scheme be ultimately sanctioned so far as it concerned capital raised in India, the railways constructed under it should be included in the Programme.

The points which were referred for consideration were :—

- (i) whether—in view of the fact that these small Companies create interests separate from, and in some ways antagonistic to, the main lines and add to the difficulties of railway administration—endeavours should not be made to extinguish such Companies by purchase rather than to increase their number ;
- (ii) whether the creation of a Provincial Stock would not diminish the demand for Government loans and thus depreciate the Government of India securities.

The Railway Board, in advising Government, expressed the opinion that there was ample room for such small Companies, and that the disadvantages complained of under (i) could be removed by providing, in the contracts to be entered into with those Companies, suitable terms for compulsory purchase. As regards (ii) the leading Bankers in Calcutta, whose opinions on the point were invited, were unanimous in thinking that the Government of India securities would not be affected by the issue of loans with a Provincial guarantee, provided this was not done on too extensive a scale.

The Provincial Governments and various local bodies were also consulted, and, after a careful consideration of the views expressed by them, the Government of India again, in July 1909, recommended the proposal to the Secretary of State, with the remark that, in their matured opinion, neither of the two points raised by the Secretary of State need form any obstacle to its acceptance. It was proposed that the terms for Provincial guarantee should be identically the same as those for Imperial guarantee, and that lines guaranteed by Provincial Governments should ordinarily be purchased by the Imperial Government.

In December 1909 the Secretary of State replied that he was willing to allow Provincial Governments to grant guarantees to Branch Line Companies under the terms of the Revised Branch Line Terms Resolution, (which was at the same time also sanctioned by him), and subject to the conditions already mentioned.

10. District Board's guarantee on capital raised for railway construction.—In 1898 a resolution was issued by the Finance Department enjoining on District Boards the rule that the interest on the capital raised for the construction of railways should not be guaranteed, nor the rate of interest determined, without the previous consent of the Government of India, except in cases where there is a margin between the actual rate of cess

levied by the District Board concerned and the maximum rate leivable under the laws, as under the system of Provincial contracts then in force the whole of the liability in connection with such guarantees would be transferred to the Imperial Government on the next revision of the contracts. As, however, in consequence of the quasi-permanent arrangements recently made with Provincial Governments, this objection has disappeared, the question of amending the order is under the consideration of the Government of India in the Finance Department.

11. Levy of a special railway cess by District Boards in provinces other than Madras.—In January 1906 the Government of India suggested to the Secretary of State that in provinces other than Madras, where the rural tax-payer would obtain relief by the abolition of the village service, patwari and other cesses, District Boards might be empowered to levy a special cess on land, such as is permitted by the Madras Act VI of 1900, for the construction or guarantee of light local railways and tramways. In February of the same year the Secretary of State asked for the views of the Government of India on the subject in greater detail. On a reconsideration of the matter the Government of India decided not to pursue the proposal, for the time being at all events, and informed the Secretary of State accordingly. The considerations which actuated the Government of India in altering their views are as follows :—

- (i) as an asset for the construction of railways the cess would fall more heavily on the poorer than on the richer districts, which latter would probably be able to pay the interest on borrowed capital from their ordinary resources ;
- (ii) as a reserve for the guarantee of interest to private agency the cess might remain a purely potential impost in years of full harvests and active trade ; but it might have to be drawn upon, in years of depression or scarcity, just at the time when the agricultural classes would be least able to bear the extra burden ;
- (iii) a railway cess would not tap a new source of revenue, but would only impose a fresh burden on the land and would be contrary to the policy recently pursued by the Government of India in lightening the burdens on the land.

12. Construction of District Board railways in Madras.—With a view to facilitate the construction of branch railways by private enterprise, several District Boards in the Madras Presidency were permitted to levy a special railway cess. It was intended that, on the security of the cess, the District Boards would either raise loans in the open market, or offer guarantees to private Companies, for the construction of branch railways to develop the resources of the districts concerned.

Large sums of money have been collected by the various District Boards from the proceeds of the special cess, and several branch lines have been proposed by them for construction ; these will, in the majority of cases, take off from the South Indian railway.

The Government of Madras, however, failed to settle satisfactory terms with the South Indian Railway Company for the construction and working of

those lines and represented to the Railway Board that, owing to the hostile attitude adopted by the South Indian Railway Company towards District Board projects in general, the object with which the imposition of the special cess was sanctioned had so far been defeated. The Local Government also requested that the matter should be brought to the notice of the Secretary of State and that he should be asked to press the Company to agree to suitable working terms.

The position is undoubtedly a very serious one, and the difficulty pointed out by the Madras Government is accentuated by the fact that, under the South Indian Railway Company's existing contract, the Secretary of State has no power to compel the Company to construct and work the lines in question on terms which are favourable to District Boards.

The existing contract will, however, shortly be terminated and a new contract entered into between the Secretary of State and the reconstituted South Indian Railway Company, and the Government of India have recommended to the Secretary of State that, to remedy the present unsatisfactory state of affairs, suitable provisions should be made in the new contract with the Company for the construction and working of District Board railways. The matter is now under the consideration of the Secretary of State.

13. Delegation of powers to the Government of Bombay to grant concessions for the construction of local branch railways by private enterprise negatived.—Referring to the Report of the Committee on Indian Railway Finance and Administration, the Government of Bombay, in August 1908, communicated to the Government of India their views on the remarks made by that Committee in regard to the question of encouraging private enterprise in the construction of local branch and feeder lines. The Local Government were of opinion that the question was too summarily dealt with in that report, and stated that they could not endorse the Committee's view that it was open to question whether true private enterprise had ever failed to receive due encouragement at the hands of Government.

The Governor in Council further remarked that so long as the Programme of Railway Construction laboured under the severe limitations which, according to the Committee, were inevitable, the principle, advocated by the latter, that the main lines should not only construct and work, but own, their branches could not be maintained.

The Local Government also complained that the attitude adopted by the Home Boards of the main line companies towards private promoters' proposals for the construction of branch railways had in many cases been obstructive to the last degree and that great delays often occurred in dealing with the proposals, as, under the existing system, a multiplicity of authorities had to be consulted before any terms could be arranged.

With a view to avoid such delays and to remove the existing drawbacks to the construction of branch railways, the Government of Bombay proposed that they should be given a free hand to sanction small local lines on certain conditions and they made certain suggestions as to the policy to be followed in dealing with the promoters' proposals.

The Government of India referred the matter to the Secretary of State, and, with his approval, the proposal has been negative and the Bombay Government have been told —

- (a) that the fundamental objection to their proposal is that it would tend to dissociate private railway enterprise in the Bombay Presidency from any general policy which the Imperial Government might desire to introduce ;
- (b) that railway extension in India is essentially a matter of Imperial policy, and the necessity for complete co-ordination as to the lines which it should pursue is one which the Government of India cannot set aside ; and
- (c) that, apart from the fact that it is undesirable that private railway enterprise should receive a more favourable reception and better terms in one province than it is possible to concede to it in others,—which in itself is a serious obstacle to the grant of free powers to any one Local Government,—the construction of light railways by private enterprise in one province, without sufficient regard to railway development or possible development in its neighbours, might cause difficulties both to existing railway interests and to the Government of India, which it would not be easy to remove.

It has also been explained to the Bombay Government that there is no reason why any undue delay should occur in dealing with proposals within the Branch Line Terms sanctioned by the Secretary of State which may be submitted to the Government of India for orders, provided the initial stage of negotiations has been properly conducted.

14. Contribution by Native States towards the cost of constructing railways within their territorial limits.—In March 1905 the Honourable the Agent to the Governor General in Central India referred, for the orders of the Government of India, two questions—(i), whether the Gwalior Durbar might be given the option of constructing, or bearing the cost of construction of, that portion of the Nagda-Muttra railway which lies within their territory, and, (ii), whether the Government of India were prepared to issue a general ruling as to the grant of similar options to Native States in the carrying out of future railway projects. As regards (i) he was informed that the Government of India were prepared to accept a contribution from the Gwalior Durbar towards the cost of constructing that portion of the Nagda-Muttra railway which lies in Gwalior territory, the net earnings or losses on the whole system, Nagda to Muttra, being divided between the Government and the Durbar in proportion to the capital invested, but that the contribution would not entitle the Durbar to any share in the management of the line. As regards (ii) he was informed that the Government of India did not consider it desirable to issue a ruling, as each case should, it was considered, be treated on its merits, taking all the circumstances into consideration ; but that the Government of India would, as far as possible, encourage the investment of the funds of Native States in railways constructed within the territorial limits of the latter whenever that could be done without prejudice to Imperial interests, giving Durbars the option of constructing or bearing the cost of construction of such railways.

The only Durbar that has taken advantage of an option granted by the Government of India is that of Jaipur, who have undertaken to contribute, by annual instalments of not less than 10 lakhs of rupees, the whole cost, (about 85 lakhs of rupees), of the section of the Nagda-Muttra railway traversing Jaipur territory. The first instalment of 10 lakhs has already been paid by the Durbar.

15. Compensation for land required for railway purposes in Native States.—This question was reconsidered by the Government of India during 1909-10 on the representation of certain Chiefs in Rajputana, and the conclusion come to was that, on grounds of equity and political expediency, it was in such cases necessary to adopt a more liberal policy than that laid down in the orders of 1890, which required Durbars to surrender land required for railway purposes free of cost. The Government of India have, therefore, with the approval of His Majesty's Secretary of State for India, recently adopted the following principles to be observed in all cases in which land in Native State territory may in future be required for railway purposes :—

- (1) Durbars will receive compensation for waste lands required for State railways proper and for State railways worked by Companies. In cases of Companies' railways the terms of whose contracts provide for the free grant of land, such lands must be ceded free of charge as is done by the British Government ;
- (2) for all other land the Durbars will receive compensation to the extent of any outlay incurred by them in its acquisition, e.g., by payments to occupiers, etc.;
- (3) they will also receive compensation for extinguished land revenue, the amount being settled by negotiation in individual cases with due regard to the indirect advantages accruing to the Durbar from the railway ;
- (4) estimates of the compensation to be granted will be framed by an officer appointed by the Government of India or by the Local Government concerned, with whom will be associated a durbar and a railway official. The estimates will subsequently be approved by higher authority.

16. Metre gauge policy for railways in Southern India.—In 1898 the Government of Madras urged the conversion of the section of the Madras railway west of Podanur to the metre gauge and the adoption of that gauge for the further development of railway communication in Southern India. The Government of India, while neither disputing nor accepting the views of the Local Government as to the expediency of the policy advocated, came to the conclusion that the time had not yet arrived for the conversion to be anything but an impediment to existing traffic, inasmuch as it would interpose a gratuitous break of gauge where none existed, and that it was not worth while to sacrifice future freedom of action in the matter of the redistribution of the Madras railway system on the termination of the Company's contract in 1907, merely in order to prevent the extension of the Madras railway to Baliapatam on the gauge (5' 6") of the parent line.

In 1906 the Government of Madras asked for the approval of the Government of India to the proposal that all railway extensions south of the

south-west branch of the Madras railway should be constructed on the metre gauge, and requested that they might be authorised to communicate the decision to the Agents of Railway Companies and to such of the public interested in railway enterprise as, in their opinion, were entitled to possess it.

In reply the Local Government were told that, as the Government of India had not yet decided on the subject of the standard (5' 6") gauge extension to Southern India and also in view of the probable determination of the present contracts of both the Madras and the Southern Mahratta Railway Companies, the Railway Board were of opinion that the time had not yet arrived for them to advise the Government of India to come to a final decision on the point, and that it would be better not to make any definite pronouncement on the subject till the Secretary of State had entered into new contracts with respect to the two railways mentioned above.

In connection with the proposed Indo-Ceylon connection scheme the Government of Madras were, in 1907, informed that the Government of India had decided that a 5' 6" gauge line connecting Northern India with Ceylon was not necessary. The Local Government were also told that, in the opinion of the Railway Board, it would be expedient to keep the question of the gauge for future railway extensions in the south of India in suspense for the time being, in view of the fact that, even if a decision on this point was arrived at, it could not be acted upon for want of funds for the construction of new lines during 1907-08.

The question has not since been reopened by the Local Government.

PROGRESS IN RAILWAY CONSTRUCTION.

17. Mileage of railways and capital expenditure.—The statements below exhibit the mileage of railways sanctioned, opened, and remaining to be constructed on the 31st July 1910, and the capital expenditure incurred during each Viceroyalty, commencing with that of the Marquis of Dalhousie.

18. Mileage sanctioned.—At the close of 1905, the last year of the preceding Viceroyalty, the total sanctioned mileage was 31,376·76 : in the period 1st January 1906 to the 31st July 1910, 3,360·03* miles of additional railways were sanctioned, bringing the total, after allowing for abandonments and corrections, etc., of mileage indicated below,† up to 34,660·70 miles :—

	5' 6"	3' 3½"	2' & 2' 6"	Total.
	gauge.	gauge.	gauges.	
	Miles.	Miles.	Miles.	Miles.
State lines worked by Companies ...	746·21	389·42	192·94	1,328·57
State lines worked by the State ...	522·99	24·00	94·66	611·65
Companies' lines guaranteed under the old contracts ...	...	...	...	...
Companies' lines guaranteed under modern contracts ...	...	...	...	...
District Boards' lines ...	...	2·50	...	2·50
Branch Line Companies receiving rebate from traffic interchanged with main lines ...	237·19	33·91	...	271·10
Assisted Companies' lines—				
(a) subsidized by the Government of India ...	30·00	56·82	...	86·82
(b) subsidized by Local Governments ...	...	...	...	...
(c) subsidized by District Boards ...	...	...	95·87	95·87
(d) receiving land only from Government ...	...	344·51	57·23	401·74
Unassisted Companies' lines ...	...	...	48·68	48·68
Companies' lines guaranteed by Native States ...	...	...	37·95	37·95
Native State lines—				
(a) worked by Native States ...	...	277·90	...	277·90
(b) worked by Companies ...	...	57·99	85·99	143·98
(c) worked by State railway agency ...	...	23·27	...	23·27
Foreign lines ...	...	...	...	...
Total	... 1,559·66	1,187·05	613·32	3,360·03

* Includes 1·19 miles sanctioned after the 18th November 1905, the date on which Lord Minto assumed office.

† Made up as follows :—

	Miles.
Length sanctioned at end (31st December 1905) of Lord Curzon's Viceroyalty ...	31,377
Sanctioned during the Earl of Minto's Viceroyalty ...	3,360

Deduct—

	Miles.
Extension of the Assam-Bengal railway from Noakhali to Shahab Ghatta closed ...	4
Jullundur-Kapurthala-Sultapur (British and Native State sections) omitted ...	29
Salem-Attur railway omitted ...	36
Corrections of mileage ...	7
Total	34,737

The following table shows the total length of railways sanctioned during the administration of the several Viceroys :—

	5' 6"	3' 3½"	2' & 2' 6"	Total.
	gauge.	gauge.	gauges.	
	Miles.	Miles.	Miles.	Miles.
The Marquis of Dalhousie (12th January 1848 to 29th February 1856).	1,799 $\frac{1}{4}$	...	...	1,799 $\frac{1}{4}$
The Earl of Canning (29th February 1856 to 12th March 1862).	1,888 $\frac{1}{4}$	166 $\frac{1}{4}$	...	2,055 $\frac{1}{4}$
The Earl of Elgin (12th March 1862 to 20th November 1863).	812 $\frac{1}{4}$	...	27 $\frac{1}{4}$	340 $\frac{1}{4}$
Lord Lawrence (12th January 1864 to 12th January 1869).	792 $\frac{1}{4}$	17 $\frac{1}{2}$	...	810
The Earl of Mayo (12th January 1869 to 8th February 1872).	1,163	542 $\frac{1}{4}$	20	1,725 $\frac{1}{4}$
The Earl of Northbrook (3rd May 1872 to 12th April 1876)	842 $\frac{1}{4}$	855 $\frac{1}{4}$	...	1,197 $\frac{1}{4}$
The Earl of Lytton (12th April 1876 to 8th June 1880) ...	692 $\frac{1}{4}$	1,468 $\frac{1}{4}$	89 $\frac{1}{4}$	2,250 $\frac{1}{4}$
The Marquis of Ripon (8th June 1880 to 18th December 1884).	2,147 $\frac{1}{4}$	2,644 $\frac{1}{4}$	128	4,919 $\frac{1}{4}$
The Marquis of Dufferin and Ava (18th December 1884 to 10th December 1888).	749 $\frac{1}{4}$	1,030 $\frac{1}{4}$	50 $\frac{1}{2}$	1,830 $\frac{1}{4}$
The Marquis of Lansdowne (10th December 1888 to 27th January 1894).	1,569 $\frac{1}{4}$	2,100	111 $\frac{1}{4}$	3,780 $\frac{1}{4}$
The Earl of Elgin (27th January 1894 to 6th January 1899).	2,863 $\frac{1}{4}$	2,154 $\frac{1}{4}$	465 $\frac{1}{4}$	5,484
Baron Curzon of Kedleston (6th January 1899 to 18th November 1905).	1,961 $\frac{1}{4}$	2,255 $\frac{1}{4}$	1,376 $\frac{1}{4}$	5,593 $\frac{1}{4}$
The Earl of Minto (18th November 1905 to 31st July 1910). (In office.)	1,559 $\frac{1}{4}$	1,187	613 $\frac{1}{4}$	3,360
Total	... 17,842$\frac{1}{4}$	14,422$\frac{1}{4}$	2,883	35,147$\frac{1}{4}$

Deduct—

Abandonments and corrections of mileage ...	...	...	...	486 $\frac{1}{4}$
Net total sanctioned mileage	... 34,661			

19. Mileage opened.—At the end of 1905, the close of the preceding Viceroyalty, 28,287·70 miles of railways were opened for traffic : between the 1st January 1906 and the 31st July 1910, 3,659·62 miles, as detailed below, were added thereto :—

	5' 6" gauge.	3' 3½" gauge.	2' & 2' 6" gauges.	Total.	
	Miles.	Miles.	Miles.	Miles.	
State lines worked by Companies ...	834·51	487·43	291·43	1,613·37	
State lines worked by the State ...	438·12	262·54	0·48	701·14	
Companies' lines guaranteed under the old contracts ...	1·01	...	...	1·01
Companies' lines guaranteed under modern contracts ...	...	...	...	...
District Boards' lines ...	...	55·70	...	55·70
Branch Line Companies receiving rebate from traffic interchanged with main lines ...	342·68	2·53	...	345·21	
Assisted Companies' lines—					
(a) subsidized by the Government of India ...	...	141·28	...	141·28
(b) subsidized by Local Governments ...	...	...	...	...
(c) subsidized by District Boards ...	...	...	41·30	41·30
(d) receiving land only from Government ...	...	267·37	156·20	423·57
Unassisted Companies' lines ...	...	...	...	...
Leased lines ...	...	...	...	...
Companies' lines guaranteed by Native States ...	...	...	...	...
Native State lines—					
(a) worked by Native States ...	...	183·57	44·73	178·30
(b) worked by Companies ...	...	90·93	66·43	158·74
(c) worked by State railway agency ...	...	...	...	...
Foreign lines ...	...	...	...	...
	Total ...	1,617·70	1,441·35	600·57	3,659·62

The total open mileage on the 31st July 1910, after taking into account minor corrections of mileage due to rechainage and realignment of lines, was thus brought up to 31,961·89 miles, the distribution of which and the relative rate of progress, under each class, are exhibited in the following tabular statement :—

	MILEAGE OPEN ON 31ST JULY 1910.				Total mileage open at end of 1905.*	Increase or decrease (+ or -).
	5' 6" gauge.	3' 3½" gauge.	2' & 2' 6" gauges.	Total.		
State lines worked by Companies.	9,044·54	8,081·27	601·99	17,727·80	14,665·10	+ 3,062·70
State lines worked by the State.	5,394·10	1,027·24	254·78	6,676·12	5,916·89	+ 759·23
Companies' lines guaranteed under the old contracts.	...	...	...	...	1,408·36	- 1,408·36
Companies' lines guaranteed under modern contracts.	32·04	...	...	32·04	32·04	...
District Boards' lines ...	...	155·16	...	155·16	99·46	+ 55·70
Branch Line Companies receiving rebate from traffic interchanged with main lines.	996·37	142·79	...	1,139·16	910·41	+ 228·75
Assisted Companies' lines—						
(a) subsidized by the Government of India	162·36	202·06	...	364·42	216·28	+ 148·14
(b) subsidized by Local Governments.	...	77·50	51·00	128·50	128·50	...
(c) subsidized by District Boards.	...	38·40	162·84	199·24	158·00	+ 41·24
(d) receiving land only from Government.	22·21	1,289·66	228·24	1,535·11	1,171·77	+ 368·34
Unassisted Companies' lines	...	5·50	38·27	38·77	41·77	- 3·00
Leased lines ...	79·19	...	...	79·19	...	+ 79·19
Companies' lines guaranteed by Native States.	...	...	...	...	...	...
Native State lines—						
(a) worked by Native States.	...	1,447·30	75·29	1,522·59	1,333·49	+ 189·10
(b) worked by Companies.	711·29	905·38	488·84	2,055·51	1,896·74	+ 158·77
(c) worked by State railway agency.	201·08	...	38·60	234·68	235·29	- 0·61
Foreign lines ...	...	78·60	...	78·60	78·60	...
Total ...	16,643·18	18,443·86	1,874·85	31,961·89	28,287·70	+ 3,674·19

* These figures were the same on the 18th November 1905, the date on which Lord Minto assumed office.

20. The most noticeable feature in the preceding statement is the large reduction of mileage under the class "Companies" lines guaranteed under the old contracts"—a reduction which is counterbalanced by a corresponding addition to the class "State lines worked by Companies." This is due to the purchase by Government of the last of the "Companies' lines guaranteed under the old contracts", *viz.*, those of the Bombay, Baroda and Central India and the Madras Railway Companies, 504 and 905 miles long, respectively, and to their working having been entrusted—the former, from 1st January 1906, to the reconstituted company of the same name, and the latter, from 1st January 1908, partly to the newly constituted Madras and Southern Mahratta Railway Company and partly to the existing South Indian Railway Company, as Agents of the State.

Of the "Branch lines receiving rebate from traffic interchanged with main lines", the South Behar railway (79 miles) has now come under the category of "Leased lines" by reason of the Company having agreed to an arrangement by which it receives, in lieu of net receipts originally provided for in the contract, a fixed rental of £30,000 per annum, while the Noakhali (Bengal) railway (35 miles) now appears under the class "State lines worked by companies" in consequence of its purchase by the State and continued working by the Assam-Bengal Railway Company; whereas the Kalka-Simla railway (59 miles), which was before classed under "Assisted Companies' lines receiving land only from Government," has, since its acquisition by the State and working as part of the North Western State railway, become a "State line worked by the State".

The continued unsatisfactory relative rate of progress in the construction of lines by Branch and Assisted Companies, disclosed in the same statement, may be attributed to the unsettled conditions which, until recently, prevailed as to the terms to be given to the promoters of this class of railway enterprise. The generous concessions made in the revised terms and conditions on which the Government of India are prepared to consider offers for the construction of such lines by the agency of private companies, referred to in paragraph 7, are, however, as therein stated, of a nature calculated to attract indigenous enterprise in the development of the country and to command the approval of the commercial community generally; these, in conjunction with the remarkable record of progressive financial success obtained during the past decade in the working of Indian railways will, it is hoped, remove the apprehensions that were felt as to the dangers and risks of embarking in such projects and induce private capitalists to enter the field of railway promotion.

21. The 3,674 miles of railways shown in the above statement as completed during the Viceroyalty of the Earl of Minto included the following principal lines and extensions:—

Nagda-Muttra railway, which provides the shortest through broad gauge route between the port of Bombay and the United Provinces of Agra and Oudh and the Punjab;

Burma Railways extensions from Pegu to Moulmein, with a branch from Henzada to Kyangin;

Baran-Kotah railway, which affords a direct short route between Bina and Kotah;

Dhone (Dronachellam)-Kurnool railway, which was constructed as an extension of the Madras and Southern Mahratta (3' 3 $\frac{1}{2}$ " gauge) railway;

Azhikal-Mangalore railway, which connects the important town of Mangalore with the railway system of India and opens out a rich part of the Madras Presidency which was much in need of railway communication ;

Bengal-Nagpur railway 2' 6" gauge extensions from Purulia to Ranchi and from Gondia to Nagpur, the latter affording direct connection between Jubbulpore and Nagpur ;

Katihar-Godagari and Gauhati extensions of the Eastern Bengal State railway, the former being a shorter connection of that system with the Bengal and North-Western railway system north of the Ganges and the latter a through route between Northern Bengal and Assam ;

the last link, between Dhanbad and Manpur, of the East Indian railway Grand Chord, giving through communication by a third route between Calcutta and Moghal Sarai ; and the

Southern section of the Jech Doab line, which passes through the country irrigated by the recently constructed Jhelum canal.

Among the larger branches and extensions of existing open lines completed and opened were the—

Ondal-Sainthia Chord and the Khurja-Hapur branch of the East Indian railway ; Warora-Balharshah extension of the Great Indian Peninsula railway ;

Lahore-Sangla and Lohrhan-Khanewal sections, and the Chichoki-Jaranwala portion of the Shorkot Road-Chichoki section, of the North Western State railway ;

Phaphamau-Zafarabad, Balamau-Sitapur and Rosa-Sitapur extensions of the Oudh and Rohilkhand State railway ;

Bareilly-Soron, Lalkua-Kashipur and Moradabad-Ramnagar extensions of the Rohilkund and Kumaon railway ;

Mansi-Bhaptiahi, Bettiah-Bhikna Thoree and Bairagnia-Bagaha extensions of the Tirhoot State railway ;

South Indian Railway Company's metre gauge line from Pamban beach to Dhanushkodi, in connection with the Indo-Ceylon connection project ;

Nilgiri mountain railway from Coonoor to Ootacamund ; and the

Morappur-Dharmapuri famine feeder line, which was also brought to completion.

Among the “ Assisted Companies’ lines ” completed and opened were the—

Shahdara (Delhi)-Saharanpur ;

Amritsar-Kasur ;

MacLeod Ganj-Ferozepore section of the Southern Punjab railway “ Ludhiana ” extension ;

Sutlej Valley ;

Mirpur Khas-Jhudo line ; and the

Barhni-Tulsipur, Gorakhpur-Chhitauni Ghat, Benares-Jhusi and Chupra-Mashrak extensions of the Bengal and North-Western railway.

Under the “ District Boards’ lines ”—

a railway from Bezwada to Masulipatam was constructed by the District Board of Kistna.

Among “ Native State lines ” completed the most important are the—

Degana-Churu extension of the Jodhpur-Bikaner railway ;

Nawai-Sawai Madhopur section of the Jaipur railway ;

Sabalgarh-Sheopur Kalan section of the Gwalior Light railways ; and the

Dholpur-Bari and Cutch railways.

22. Mileage of railways opened and capital expenditure incurred during each Viceroyalty.—The statement below exhibits the mileage of

railways opened and the capital expenditure incurred on lines open and under construction during each Viceroyalty, beginning with that of the Marquis of Dalhousie :—

Period.	MILEAGE OPENED		TOTAL CAPITAL OUTLAY	
	During Viceroyalty.	To end of Viceroyalty.	During Viceroyalty.	To end of Viceroyalty.
	Years	Miles.	Miles.	Rs.
The Marquis of Dalhousie ...	1853-55	169	169	5,50,00,000
The Earl of Canning ...	1856-61	1,418	1,587	28,50,00,000
The Earl of Elgin ...	1862-63	920	2,507	19,00,00,000
Lord Lawrence ...	1864-68	1,501	4,008	31,00,00,000
The Earl of Mayo ...	1869-71	1,066	5,074	6,00,70,000
The Earl of Northbrook ...	1872-75	1,467	6,541	10,95,55,000
The Earl of Lytton ...	1876-80	2,621	9,162	40,21,99,000
The Marquis of Ripon ...	1881-84	2,469	11,681	24,68,68,000
The Marquis of Dufferin & Ava ...	1885-88	2,945	14,576	43,19,55,000
The Marquis of Lansdowne ...	1889-93	5,928	18,504	40,42,16,000
The Earl of Elgin ...	1894-98	5,536	22,040	47,26,74,000
Baron Curzon of Kedleston ...	1899-05	6,248	28,288	73,79,93,000
The Earl of Minto ...	1906-10	(a) 3,674	(a) 81,962	(b) 65,06,18,000
				(b) 4,35,62,51,000

(a) These figures are up to 31st July 1910 only.

(b) These figures are up to the end of 1909 only.

23. Mileage under construction.—On the 31st July 1910 there remained to be constructed a length of 2,699·40 miles as under :—

	5' 6"	3' 3½"	2' & 2' 6"	Total.
	gauge.	gauge.	gauges.	
State lines worked by Companies ...	773·63	364·77	271·57	1,409·97
State lines worked by the State ...	296·06	24·00	94·21	414·27
Companies' lines guaranteed under the old contracts ...	...	...	...	...
Companies' lines guaranteed under modern contracts ...	...	...	...	...
District Boards' lines ...	...	...	...	...
Branch Line Companies receiving rebate from traffic interchanged with main lines ...	...	...	33·91	33·91
Assisted Companies' lines—				
(a) subsidized by the Government of India ...	30·00	56·82	...	86·82
(b) subsidized by Local Governments ...	...	8·52	...	8·52
(c) subsidized by District Boards ...	...	...	64·25	64·25
(d) receiving land only from Government ...	...	185·88	106·73	292·56
Unassisted Companies' lines ...	...	...	47·51	47·51
Leased lines ...	...	...	...	...
Companies' lines guaranteed by Native States ...	...	...	37·95	37·95
Native State lines—				
(a) worked by Native States ...	...	144·12	...	144·12
(b) worked by Companies ...	...	50·26	85·99	136·25
(c) worked by State railway agency ...	23·27	...	...	23·27
Foreign lines ...	...	...	...	...
Total ...	1,122·96	868·23	708·21	2,699·40

24. Growth of the railway revenue and provision of increased funds for railway expenditure.—The policy of Lord Curzon's Government as to the allotment of a relatively large proportion of the annual budget grant to open line works including rolling-stock, to provide for and foster the ever increasing traffic and demands of the trade, has continued to be pursued with satisfactory results, as exhibited in the following figures which show that, after meeting, in addition to the expenses for working, interest charges on capital outlay by the State and on capital raised by Companies, annuity payments connected with the purchase of railways by the Government and that portion of annuity which represents redemption of capital charged against revenue, there has, with one exception, been an uninterrupted and appreciable gain to the State :—

	Gain or loss to the State.	
	Rs.	
1905	+ 2,63,84,824
1906	+ 2,47,51,701
1907	+ 3,82,79,206
1908	- 2,83,63,936
1909	+ 17,15,809
Total gain to the State in the period 1905—1909 ...		6,77,67,604

During the five years 1905-1909 the net average gain to the State from the working of State railways amounted to Rs. 135·54 lakhs per annum, compared with an average of Rs. 108·28 lakhs during the preceding quinquennial period 1900-1904, when the railways in India, from the commencement of operations, began to show a succession of substantial surpluses of revenue over expenditure. Omitting the figures relating to the year 1905 as properly pertaining to Lord Curzon's term of office, the results for the quadrennial

periods 1906-1909 and 1901-1904 compare as 103·46 to 133·17. The gain during the last quadrennium would have been considerably augmented, but for the untoward conditions for which the year 1903 was conspicuous and which resulted in a net loss of over Rs. 233½ lakhs.

The total gain, amounting to Rs. 8,05,23,505, which accrued to the State in the last six years (1900-1905) of Lord Curzon's Viceroyalty was, as shown above, followed by a like profit of Rs. 6,30,30,907 in the first two of the succeeding years (1906 and 1907) during Lord Minto's Viceroyalty. Thus for eight consecutive years the financial result to the Government marched steadily forward until, for the year 1907, the record figure of Rs. 8,82,79,206—the highest in the eight years under notice—was attained.

The deficit in the year 1908 was due to the abnormal depression of trade throughout the country, accentuated by the prevalence of famine combined with expenditure of an obligatory nature to meet the growing demands of traffic and special and extraordinary charges under the heads of betterment and improvement generally in the working of Indian railways, on the repair of extensive flood damages, the high price of coal and the yearly increasing cost of labour. The net profit of Rs. 17,15,809 in 1909, however, indicates a reaction towards the more favourable conditions that previously existed, and, as soon as the improvements inseparable from the needs of the present situation are effected and the working expenses steadied, it may confidently be expected that, other circumstances being normal, the financial results in the future will compare favourably with those of the past.

In the Summary of Lord Curzon's Viceroyalty it was stated that the improvement in railway earnings and the increasing prosperity of the country led to a steady increase in the funds provided for capital expenditure, until, in 1905-06, they reached 12½ crores, the highest allotment that had then been made in any one year. In the Viceroyalty of the Earl of Minto the increase in capital funds has been still greater, for in the financial year 1910-11 the amount allotted was 16·30 crores,—the 18·75 crores recommended by the Committee on Indian Railway Finance and Administration not having been worked to owing to financial considerations. The total grants for capital expenditure during the present Viceroyalty amounted to 76·30 crores, or an average of 15·26 crores per annum—figures considerably in excess of any allotments hitherto made. In addition to the sums so spent on railways in India, several railway projects were undertaken by Companies without State assistance and by Native States, the expenditure on which is excluded from the Government Programme. Of the total grants to capital during 1906-07 to 1910-11, 56·31 crores were allotted to improvements of open lines and for rolling-stock, while 17·89 crores were allotted to the completion of lines already under construction and 2·10 crores to the construction of new lines. The greatest mileage added in any previous Viceroyalty was 6,248 miles, or an average of 892 miles a year, in the Viceroyalty of Lord Curzon, the next in order being that of the Marquis of Lansdowne with 3,928 and 786 miles, respectively, as against 3,674 and 735 miles, respectively, during the Viceroyalty of the Earl of Minto. The diminution in the additions to open mileage during the Viceroyalty of the Earl of Minto has, however, been compensated for by the results produced by the increased provision for the needs of open lines as a first charge upon the money available for railway purposes: the division of the allotments from budget provisions during Lord Curzon's term of office having amounted to 34·48 crores (or 46·60 per cent) for improvement of existing lines and for rolling-stock, 34·48 crores (or 46·60 per cent) for the completion of lines already under construction and 5·03 crores (or 6·80 per cent) for the construction of new lines, compared with crores 56·31 (or 73·80 per cent), 17·89 (or 23·45 per cent) and 2·10 (or 2·75 per cent), respectively, during Lord Minto's Viceroyalty.

PRINCIPAL RESULTS OF RAILWAY WORKING.

25. Statistical results.—The statement below shows the main statistical results of all Indian railways treated as one system during the years 1905 to 1909, and compares those of 1905, the last year of the preceding Viceroyalty, with those of 1909, the fourth year of Lord Minto's term of office and the latest for which complete figures are available :—

		1905.	1906.	1907.	1908.	1909.	Increase or decrease in 1909 over 1905 (+ or -)	Percent
Miles open at the end of the calendar year	Miles	28,288	29,089	29,957	30,576	(b) 31,962	+3,674	12·99
Mean mileage worked during the year ...	„	27,996	28,807	29,568	30,617	31,436	+8,440	12·29
Capital outlay on open lines at close of the year (in thousands) ...	(a) Es.	3,58,51,80	3,71,27,05	3,91,86,93	4,11,91,71	4,29,83,20	+71,81,40	19·89
Number of passengers carried (in thousands) ...	No.	248,157	271,063	305,865	321,169	329,380	+81,923	32·73
Tonnage of goods carried (in thousands) ...	Tons	54,936	58,869	62,099	62,398	60,902	+5,966	10·88
Passenger unit-mileage (in thousands) ...	Unit-miles	9,900,481	10,688,095	11,840,649	12,102,929	12,364,579	+2,464,098	24·89
Ton-mileage of goods (in thousands) ...	Ton miles	9,040,760	9,770,574	10,840,885	9,925,830	9,840,441	+299,681	3·31
Train-mileage (in thousands) ...	Train-miles	107,046	114,489	124,786	127,581	128,260	+21,214	19·82
Gross earnings (in thousands) ...	Rs.	(a) 41,69,92	44,18,58	47,30,51	44,82,69	47,06,38	+5,36,46	12·86
Working expenses (in thousands) ...	„	(a) 19,95,33	22,02,21	24,82,32	27,00,25	26,38,48	+6 43,15	33·22
Net earnings (in thousands) ...	„	21,74,59	22,11,37	22,98,18	17,82,44	20,67,90	-1,06,69	...
Percentage of net earnings on capital outlay ...	... Per cent	(a) 6·07	5·96	5·86	4·83	4·81	-1·26	...
Gross earnings per mile per week	Rs.	281	292	304	282	287	+3	1·06
Percentage of working expenses on gross earnings ...	... Per cent.	(a) 47·85	49·89	51·42	60·24	56·06	+8·21	...

(a) Revised figures.

(b) These figures are up to the 31st July 1910.

The chief features in this statement are the comparatively high percentage of increase, as between the years 1905 and 1909, in the capital outlay on open lines, contrasted with those of the tonnage of goods carried and gross earnings and the relatively abnormal inflation of working expenses. The first of these is attributable to the pressing needs of open lines generally, notably in the large additions and improvements to rolling-stock and corresponding additions and betterments in open line works required to facilitate the effective handling of additional stock, which in 1909 absorbed as much as 86·91 per cent of the total capital outlay. The disproportion in the expansion of the tonnage of goods moved and in the gross earnings were due to the decrease in the traffic in coal arising from the general depression in trade and the consequent diminution in the earnings derived therefrom, together with the fact that traffic generally could not be expected to recover fully from the severe check it had sustained from the calamitous conditions that prevailed in the year 1908. The causes which chiefly led to the proportionately high percentage of increase in the expenses of working which are enumerated in the preceding paragraph may be amplified by the observation that railway revenue expenditure consisted of charges absolutely necessary to meet existing traffic ; to provide for its expansion and consequent advancement in all departments to keep in line with the times ; for expenditure necessitated by casualties such as serious breaches in the permanent-way and other damages caused by floods ; for the renewal of the track and the strengthening of girders and bridges to suit the increasing weight of engines and loads of trains ; the doubling of sections of lines, the remodelling of station yards and terminal accommodation ; and, generally, to keep railway facilities abreast of the demands of the public and the trade. The greater portion of these charges will

be productive of increased revenue, if not at once at any rate in the near future; but others and by no means a negligible portion, although not bringing in a return, have been forced upon Railway Administrations by the public demand for better services and conveniences than were afforded in the past.

26. The statistical return of net earnings on the capital outlay on open lines and lines partly open of the different classes of railways for the past five years is given below:

		RETURN PER CENT ON CAPITAL				Total.
		5' 6" gauge.	3' 2½" gauge.	2' 6" gauge.	2' 0" gauge.	
Owned by the State	1905	6.40	5.84	0.15	0.27	6.06
	1906	6.85	5.05	1.12	1.43	5.94
	1907	6.23	4.96	1.26	0.06	5.82
	1908	4.17	4.43	1.04	1.21	4.18
	1909	4.97	4.81	0.68	1.18	4.75
Owned by Companies guaranteed under the old contracts.	1905	6.35	...	...	...	6.35
	1906	4.40	...	...	...	4.40
	1907	3.67	...	...	...	3.67
Owned by Companies guaranteed under modern contracts.	1905	5.87	...	...	...	5.37
	1906	5.71	...	...	...	5.71
	1907	6.60	...	...	...	6.60
	1908	6.39	...	...	...	6.39
	1909	6.21	...	...	...	6.21
Owned by District Boards	1905	...	5.61	...	...	5.61
	1906	...	4.85	...	...	4.85
	1907	...	5.98	...	...	5.98
	1908	...	6.27	...	...	6.27
	1909	...	6.50	...	...	6.50
Owned by Branch Line Companies receiving rebate from traffic interchanged with main lines.	1905	5.53	4.62	...	...	5.42
	1906	5.18	6.01	...	...	5.99
	1907	7.64	7.11	...	...	7.58
	1908	6.88	8.16	...	...	6.97
	1909	5.75	7.96	...	...	5.98
Leased lines	1905	...	...	...	...	...
	1906	3.76	...	...	...	3.76
	1907	3.76	...	...	...	3.76
	1908	3.76	...	...	...	3.76
	1909	3.76	...	...	...	3.76
Owned by Companies subsidized by the Government of India.	1905	6.72	6.90	...	...	6.66
	1906	6.63	1.54	...	...	4.46
	1907	7.57	4.13	...	...	6.16
	1908	6.93	4.05	...	...	5.80
	1909	7.48	4.62	...	...	6.14
Owned by Companies subsidized by Local Governments	1905	...	4.95	...	10.91	6.74
	1906	...	4.63	...	10.76	6.46
	1907	...	4.34	...	11.43	6.43
	1908	...	4.94	...	11.24	6.79
	1909	...	5.25	...	11.66	7.11
Owned by Companies subsidized by District Boards	1905	...	9.15	5.58	9.70	8.23
	1906	...	10.86	7.18	8.93	9.11
	1907	...	11.09	6.73	9.97	9.33
	1908	...	12.02	5.11	8.27	8.61
	1909	...	12.48	4.87	8.80	8.60
Owned by Companies receiving land only from the Government of India.	1905	8.63	5.51	2.71	...	4.91
	1906	8.84	5.46	3.09	...	5.40
	1907	8.80	6.26	3.22	...	5.94
	1908	8.08	5.55	3.51	0.80	5.34
	1909	8.99	5.26	6.21	2.48	5.39
Owned by Unassisted Companies	1905	...	1.62	2.07	...	1.79
	1906	...	1.49	3.05	...	2.10
	1907	...	1.34	3.16	...	2.06
	1908	...	1.80	2.79	...	2.19
	1909	...	2.06	3.43	...	2.60
Owned by Native States	1905	5.68	4.99	4.95	0.96	8.47
	1906	5.72	5.19	4.34	1.94	5.28
	1907	6.58	6.04	5.69	1.84	6.13
	1908	5.81	5.18	4.98	2.13	5.87
	1909	5.35	4.88	6.24	1.25	5.01
Owned by Foreign States	1905	...	1.41	...	...	1.41
	1906	...	1.28	...	...	1.28
	1907	...	1.95	...	...	1.95
	1908	...	2.41	...	...	2.41
	1909	...	2.38	...	...	2.33

The capital outlay on which the calculations have been based is the sum actually expended on the construction of the several railways and on lines partly open, no account having been taken of *premia* in the purchase of railways by the State and of other special items of capital expenditure. The net earnings have been arrived at by the deduction from gross earnings of the expenses incurred in the maintenance and working of the lines; no deductions have been made of interest on capital outlay and other charges met from the revenue derived by railways.

27. Financial results to the State.—The results of working the railways shown in the subjoined table, which also compares the figures for 1905, the last Viceroyalty and the latest for which complete information is obtainable. [It is to the real surplus derived from the railways open to traffic, as the interest lines were being constructed by private enterprise, would be charged to the

	IN THOUSANDS					
	1905.			1906.		
	State railways.	Guaranteed railways.	Total.	State railways.	Guaranteed railways.	Total.
REVENUE.						
Gross traffic earnings—						
State railways	84,40,08	..	84,40,08	88,24,19	...	88,24,19
Guaranteed railways ... ... ...	... ...	8,32,99	8,32,99	...	(b) 1,63,32	1,63,32
Repayment of advances of interest—						
Subsidized railways	6,42	...	6,42	8,89	...	8,89
Total Revenue ...	34,46,50	3,32,99	37,79,49	38,33,08	1,63,32	39,96,10
EXPENDITURE.						
Working expenses—						
State railways	16,68,14	...	16,68,14	18,90,38	...	18,90,38
Guaranteed railways ... ... ...	... ...	1,65,40	1,65,40	...	(b) 1,04,85	1,04,85
Share of surplus profits paid to Companies—						
Guaranteed railways ... ... ...	... ...	26,03	26,03	...	(b) 9,05	9,05
State railways	49,07	...	49,07	55,72	...	55,72
Land and supervision charges—						
Guaranteed railways ... ... ...	... ...	5,86	5,86	...	-4,03	-4,03
Land and subsidy charges	4,52	...	4,52	5,83	...	5,83
Miscellaneous railway expenditure ...	-2,43	...	-2,43	7,30	...	7,30
Total Expenditure ...	17,19,30	1,97,20	19,16,59	19,59,23	1,09,88	20,69,11
Net Revenue ...	17,27,20	1,35,70	18,62,90	18,73,85	5,41	19,27,29
Return on capital (a) per cent ...	4.63	3.84	4.57	4.57	2.71	4.50
ORDINARY INTEREST CHARGES.						
Interest on capital outlay—						
State railways	5,46,10	...	5,46,10	6,08,63	...	6,08,63
Interest on debt for purchase of railways ...	1,71,45	...	1,71,45	2,19,71	...	2,19,71
Interest on advances of capital to Companies ...	78,38	...	78,38	75,34	...	75,34
Interest on capital raised by Companies ...	1,95,87	...	1,95,87	2,06,47	...	2,06,47
Portion of annuities in purchase of railways representing interest on capital ...	3,53,61	...	3,53,61	3,50,88	...	3,50,88
Interest on capital of Guaranteed Companies ...	... ...	1,60,86	1,60,86	...	(c) 1,17,08	1,17,08
Total interest ...	18,89,91	1,60,86	15,00,77	14,61,03	1,17,08	15,78,11
Surplus of net revenue over interest ...	3,87,29	-25,16	3,62,13	4,12,82	-63,64	3,49,18
Return on capital (a) per cent ...	1.04	...	...	1.01	...	...
Portion of annuity payments representing redemption of capital also charged against revenue ...	98,28	...	98,28	1,01,66	...	1,01,66
Actual net gain + or loss — ...	+ 2,89,01	- 25,16	+ 2,63,85	+ 8,11,16	- 63,64	+ 2,47,52
Return on capital (a) per cent. ...	0.78	...	...	0.76	...	...

(a) See paragraph 28 below.

(b) Includes the following sums adjusted in connection with the Bombay, Baroda and Central India railway, which became a State line with effect from 1st January 1906:—

Gross traffic earnings	Rs.	Working expenses	Rs.	Surplus profits	Rs.
... ...	18,29,525	... ...	15,71,816	...	7,80,248
Net receipts ...	- 2,42,291				

(c) Includes interest on the Bombay, Baroda and Central India railway capital amounting to £244,790 = Rs. 36,71,850.

in which the State has incurred financial responsibility, during the years 1905 to 1909, are year of the preceding Viceroyalty, with those of 1909, the fourth year of the present be noted that the figures of surplus of net revenue over interest shewn therein understate charges include the interest on the capital of lines under construction, which, if these capital account.]

OF RUPEES.

1907.			1908.			1909.			Increase or decrease in 1909 over 1905 (+ or -).	Per cent.
State railways.	Guaranteed railways.	Total.	State railways.	Guaranteed railways.	Total.	State railways.	Guaranteed railways.	Total.		
40,68,47	...	40,68,47	40,01,39	...	40,01,39	42,19,58	...	42,19,58	...	...
...	1,56,96	1,56,96	...	(d)	...	...	(d)	...	...	...
8,27	...	8,27	10,40	...	10,40	8,71	...	8,71	...	...
40,76,74	1,56,96	42,33,70	40,11,79	...	40,11,79	42,28,29	...	42,28,29	+ 4,48,80	11.87
20,81,84	...	20,81,84	24,60,80	...	24,60,80	24,17,79	...	24,17,79	...	...
...	1,04,22	1,04,22	...	11	11	...	4	4	...	...
...	1,29	1,29	...	1,83	1,83	...	1,83	1,83	...	...
61,08	...	61,08	62,28	...	62,28	49,69	...	49,69	...	...
...	54	54	...	16	16	...	-15	-15	...	...
3,67	...	3,67	5,04	...	5,04	11,20	...	11,20	...	...
10,84	...	10,84	6,13	...	6,13	4,17	...	4,17	...	...
21,57,43	1,06,05	22,63,48	25,34,25	2,10	25,36,35	24,82,85	1,72	24,84,57	+ 5,67,98	29.69
19,19,31	50,91	19,70,22	14,77,54	-2,70	14,75,44	17,45,44	-1,72	17,43,72	-1,19,18	-6.83
4.58	2.59	4.44	3.19	...	3.18	3.68	...	3.67	-0.90	...
4,90,14	...	4,90,14	5,88,94	...	5,88,94	5,87,68	...	5,87,68	...	...
2,56,55	...	2,56,55	2,60,09	...	2,60,09	2,64,44	...	2,64,44	...	...
81,88	...	81,88	74,21	...	74,21	70,52	...	70,52	...	...
2,17,66	...	2,17,66	2,36,18	...	2,36,18	2,75,70	...	2,75,70	...	...
3,48,15	...	3,48,15	3,93,86	...	3,93,86	4,01,53	...	4,01,53	...	...
...	87,88	87,88	...	40,73	40,73	...	...	...	...	...
13,94,88	87,88	14,82,26	15,48,28	40,73	15,89,01	15,99,87	...	15,99,87	+ 99,10	6.60
5,24,93	-36,97	4,87,96	-70,74	-42,83	-1,13,57	1,45,57	-1,72	1,43,85	-2,18,28	-60.28
1.24	...	...	...	...	...	0.31	...	...	...	...
1,05,17	...	1,05,17	1,20,07	...	1,20,07	1,26,69	...	1,26,69	+ 28,41	28.91
+ 4,19,76	-36,97	+ 3,82,79	-1,90,81	-42,83	-2,33,64	+ 18,88	-1,72	+ 17,16	-2,46,69	-93.50
0.99	...	...	...	...	...	0.04	...	...	...	...

(d) Included in the figures against State railways, consequent upon the purchase by the State of the last of the Guaranteed Companies' lines.

The disparity between the percentage of increase, as between the years 1905 and 1909, in the total revenue and total expenditure which, notwithstanding the favourable ratio of the increase per cent of total interest, resulted in an appreciable net loss to the State is accounted for in paragraphs 24 and 25. The drop in the percentage of increase of total interest charges was in the main due to the interest on capital expenditure from funds in respect of which no specific State debt was incurred having, with effect from the year 1907, been charged at the average rate of interest paid on the mean debt of India, which is slightly lower than 3·5 per cent, instead of the fixed rates of 4 and 3½ per cent previously employed, and 5 per cent which was payable on nearly the whole of the share capital under the terms of the contracts of the old guaranteed railways, the last of which, those of the Bombay, Baroda and Central India and Madras railways, were terminated with effect from the 1st January 1906 and 1st January 1908, respectively. It is, however, satisfactory to note that the State was able to meet all the interest and annuity charges arising out of the late guaranteed railways and to show a surplus in the four years, 1906-1909, of more than a crore of rupees, in spite of the heavy working expenses and the fact that, in the year 1908,—which was an exceptionally bad one owing to world-wide depression of trade combined with famine conditions and a poor harvest in India, from which, moreover, the country had not in the early part of 1909 sufficiently emerged—the surplus of the two preceding years, averaging 3½ crores, was converted into a loss of 2½ crores of rupees.

28. Capital liability of the State.—As regards the capital liability in connection with railways owned by the State there are some complications in stating the amount, owing to the fact that, in the case of some of the lines taken over, the purchase price is being paid by means of annuities. In these cases it seems correct to deduct the amount redeemed by annuity payments up to date from the original commuted capital at which the lines were taken over. On this basis the subjoined table shows the capital liability at the end of 1909 on account of all railways classed as State railways, the State outlay, as recorded in rupees in the accounts, being converted into sterling at the rate of Rs. 15=£1. The total capital at charge amounts to £316·39 million; and on this the net revenue of the State railways for 1909, £11·62 million, gives a return of 3·68 per cent. If, on the other hand, the sum of £7·93 million on account of capital redeemed by annuities and charged off to revenue in the accounts of successive years be included, the total capital outlay amounts to £324·32 million, on which figure the net revenue of £11·62 million in 1909 gives a return of 3·58 per cent.

Capital liability on account of railways classed as State railways at end of 1909.

1. Share capital of purchased railways being paid off by annuities:—

	£
Commuted value of stock purchased ...	<u>97,829,817</u>

Deduct—

Commuted capital representing annuities which were purchased by creation of debt (liability included under item 3) ...	12,741,462
New stock of the Great Indian Peninsula railway exchanged for portion of annuity (liability included under item 5) ...	1,750,000
New Stock of the Madras and Southern Mahratta Railway Company issued in exchange for portion of annuity (liability included under item 5) ...	1,500,000
Capital redeemed by annuity payments ...	<u>7,927,662</u>
	<u>23,919,124</u>

Net outstanding ...	73,910,693
2 State outlay ...	118,418,320
3. Debt incurred for purchase of railways ...	51,724,533
4. Capital advanced by Government to Companies ...	14,744,922
5. Capital raised by Companies on the Secretary of State's guarantee (including overdrafts of capital) ...	<u>57,594,705</u>
TOTAL CAPITAL LIABILITY	<u>316,893,173</u>

PRINCIPAL MEASURES AND EVENTS.

29. Extension of the Indian Railways Act, 1890 (IX of 1890), to the Basirhat-Chingrighata extension.—In exercise of the power conferred by section 146 of the Indian Railways Act, 1890 (IX of 1890), the whole of the said Act, except Section 135, was, in May 1909, extended to the Basirhat-Chingrighata (Hosanabad) extension of the Baraset-Basirhat Light railway.

30. Adoption on the Dholpur-Bari railway of the Indian Railways Act, 1890 (IX of 1890), and the rules framed thereunder.—With effect from the 10th September 1906 the Dholpur-Bari railway, which is the property of the Dholpur State, was brought under the provisions of the Indian Railways Act, 1890 (IX of 1890), and worked under the general rules for open lines of railway framed under section 47 of that Act.

31. Amendment of the Indian Tramways Act, 1886 (XI of 1886).—In connection with the proposal of the Patiala Durbar to extend the Sirhind-Bassi mono-railway to Morinda in British territory, the Government of the Punjab raised the question whether a mono-rail line is a tramway within the meaning of Act XI of 1886. The Government of India, after consulting the Advocate General, Bengal, decided that a mono-rail system should be treated as a tramway within the meaning of Act XI of 1886, and that the Act should be modified to make this clear. It was also considered necessary to amend the Act in order to bring electric tramways within its scope, as the Act, which was passed before the introduction of electric traction in India, was not applicable to such tramways.

A draft Bill to amend the Act was accordingly prepared, and has, with the approval of the Secretary of State, been introduced into the Legislative Council of the Government of India.

32. Revision of Risk Note forms B. and H.—These forms, which were approved by the Governor General in Council under sections 72, (2), (3), of the Indian Railways Act, 1890 (IX of 1890), for use when a sender elects to despatch at a “special reduced” or “owner’s risk” rate, exempted all railway administrations over whose lines articles or animals were carried, as also their transport agents, from all responsibility for any loss, destruction or deterioration of, or damage to, such articles or animals, from *any cause whatever*, before, during, or after transit. In England, however, the exemption is usually restricted to losses, etc., arising *otherwise than from proved wilful misconduct* on the part of company’s servants, and the opinion held generally being that similar conditions should prevail in India, the question was placed before the Indian Railway Conference Association, who suggested a revision of the forms.

These forms were redrafted by the Railway Board under legal advice and provide that, *except for the loss of a complete consignment, or of one or more complete packages forming part of a consignment, due to the wilful neglect of the Railway Administration, or to thefts by, or to the wilful neglect of, its servants, transport agents or carriers employed by them*, the Railway Administration shall be held free from all responsibility for any loss, destruction, or deterioration of, or damage to, a consignment before, during, or after transit. The term “wilful neglect” is defined not to include fire, robbery from a running train, or other unforeseen event or accident. The revised forms were finally accepted by all the railways parties to the Indian Railway Conference Association, and their adoption, with effect from the 1st April 1907, was approved by the Government of India in February 1907.

33. Adoption of revised Risk Note forms D. and G. on Indian railways.—Risk note forms D. and G.—the former intended for dangerous, explosive or combustible articles despatched at a “special reduced” or “owner’s risk” rate, and the latter as an alternative to form D. in cases in which a sender elects to enter into a general agreement instead of executing a separate risk note for each consignment—were revised at the suggestion of the Indian Railway Conference Association so as to throw a greater measure of responsibility upon railways in regard to the loss of complete packages, and sanctioned for adoption on railways in March 1909.

34. Sale of arms and ammunition found among unclaimed property in the possession of a Railway Company.—Arms and ammunition found among unclaimed property in the possession of a Railway Company were, in the case of some lines, being sold by the Railway Administration under the power conferred by section 56, (2), of the Indian Railways Act, 1890 (IX of 1890). As this power is subject to the provisions of any other enactment for the time being in force, including the Arms Act, it was held that the sale of arms and ammunition without a license constituted an infringement of the Arms Act, and Railway Administrations were therefore requested to send all articles of this nature to the nearest magistrate in future for sale, on the understanding that the sale proceeds would be made over to the Railway Administration.

35. Rules relating to the packing and transport of compressed gases, explosives, and dangerous petroleums.—As difficulties were, in April 1905, brought to notice in connection with the transport on Indian railways, under the rules then existing, of Anhydrous Ammonia, the Railway Board directed that all the different compressed gases given in the English General Railway Classification of Goods should be included in a separate class in the classification of Dangerous Goods. The rules were revised in September 1907, when it was decided that those for the packing and carriage by rail of compressed gases which are in force in England should be adopted *en bloc* for India, subject, however, to such modifications as the different climatic conditions of this country might require; and that Compressed Hydrogen, Oxygen, Compressed Carbonic Acid Gas and Compressed Air might be permitted to be carried by passenger train.

In October 1905 certain amendments were made in the rules regulating the transport of explosives by rail. The amendments principally affected class 6, Division 1—Ammunition class—and the mode of packing explosives for conveyance by rail. About the same time revised rules were issued to regulate the packing and carriage by rail of Petrol or Motor Spirit by both passenger and goods trains, and in May 1906 these rules were further amended and extended to all dangerous petroleums. In March 1906 the rule was re-introduced prohibiting the carriage otherwise than by rail of certain explosives across any railway bridge over which reasonable facilities for the conveyance thereof are afforded by Railway Administrations.

36. Relaxation of Indian packing rules in favour of chemicals shipped for Government Departments through the agency of the Stores Department, London.—It having been represented that the system of packing employed by the Stores Department of the India Office, London, was suitable for chemicals and free from danger, the Indian packing rules for the carriage of chemicals by rail were, in 1907, relaxed in favour of chemicals

shipped for Government Departments in India through the agency of the Stores Department of the India Office, provided they were packed in accordance with the regulations of that Department.

37. Attachment to Way Bills of Railway Receipts for consignments of fresh fruit and other perishable articles.—A question having arisen as to whether the transmission by Railway Administrations of the consignor's Railway Receipt attached to parcels of perishable articles constituted a breach of sections 4 and 5 of the Indian Post Office Act, 1898 (VI of 1898), the Government of India, in 1906, ruled that the practice of carrying Railway Receipts for such consignments attached to the Way Bills relating thereto did not constitute an infringement of its rights under the Indian Post Office Act of 1898.

38. Differentiation between tramway and railway projects.—In May 1909 the Government of Bombay submitted for orders proposals from a Syndicate for the construction and working, under the Tramways Act, of a line from Nadiad to Kapadvanj and on to Meghraj, with a branch to Godhra, a total distance of about 123 miles.

As the Tramways Act is not intended to be applied to such schemes, the Railway Board expressed the opinion that the proposal should not be sanctioned for the following reasons :—

- (i) that the application of the Tramways Act to lines of this character is an evasion of the conditions under which the Government of India and the Secretary of State preserve their predominant right to sanction and control the construction and working of the railways of India;
- (ii) that the application of the Tramways Act to such schemes would mean the creation under the guise of "tramways" of a number of railways, which would grow up in opposition to the railway system of India in which the Government of India are financially interested to an immense extent, and that this might cause considerable embarrassment in the future ;
- (iii) that for cheapness of construction the Tramways Act offers no advantages over the Railways Act, as it is possible to sanction the same standard of construction under both acts ; and
- (iv) that as regards celerity in dealing with an application, if no financial liability on Government is involved and no arrangement with a working company and no reference to the Secretary of State is required, the proposals can be dealt with under the Railways Act as quickly as it can under the Tramways Act.

The Government of India agreeing with the Railway Board, the Government of Bombay were requested to ask the Promoters to submit proposals for the construction of the Nadiad-Kapadvanj line as a railway under the Railways Act.

In Bengal, also, several schemes which should strictly speaking have been classified as railways were, in the past, promoted as tramways. Such lines having been constructed as tramways, the Tramway Companies at once asked for sanction to the application of the Railways Act to those lines for the purpose of acquiring such advantages as that Act gave them. The Government of Bengal has, therefore, also been told that, in future, all proposals for the construction of lines which are really railways should be dealt with as *railways*, not as tramways under the Tramways Act, the application of the latter being confined to the original purpose for which it was intended.

39. Control over revenue expenditure.—With a view to securing a more effective control over the revenue expenditure of railways, the Railway Board in June and September 1909 issued orders—

- (1) requiring the careful monthly examination by Railway Administrations of the progress of expenditure as compared with the budget grant and the submission to the Board of a monthly return showing the results of this comparison;
- (2) directing that the Establishment Rolls and Working Estimates should be prepared for the financial year instead of for the calendar year, and in fuller detail, distinguishing ordinary charges from special charges and renewals; and
- (3) restricting the power of Companies and of Managers of State railways to sanction reappropriations of the provisions in the sanctioned Rolls between the several Abstracts and between the classes of expenditure under each Abstract.

40. These orders were made the subject of an appeal to the Secretary of State by the Home Boards of Company-worked lines. The Companies alleged that the changes unduly encroached on the powers which they had hitherto enjoyed, and questioned the necessity for the centralization of control which they entailed. The representations of the Home Boards were referred by the Secretary of State to the Government of India for an expression of their views. In reply the Government of India explained that the object of the orders was to secure more effective financial control over the working expenses of railways with a view to avoiding a repetition of the financial embarrassments which occurred at the close of the year 1908-1909 on account of a large increase in working expenses, for which no budget provision existed, following concurrently on a serious decline in gross earnings. It was shown that the instructions issued by the Railway Board had been effective in controlling the expenditure of the year 1909-10, and that the orders generally were neither redundant nor defective, nor unnecessarily exacting in the curtailment of the powers previously exercised by Railway Administrations.

The Secretary of State has signified in a despatch to the Government of India his general approval of the action taken, and, subject to minor modifications, has accepted the measures introduced to secure more effective financial control. He has also acquainted the Boards of Directors of the Companies with his decision. There is no doubt that the orders and instructions

issued have had the desired effect and have produced beneficial results in making all Railway Administrations keep a more careful watch on their revenue expenditure.

41. Revised procedure for the preparation of construction and completion estimates.—The Secretary of State having expressed his dissatisfaction at the great delay that had been allowed to occur in the submission of revised estimates in regard to certain projects for which the original sanctioned estimates had been largely exceeded, and having also emphasised the need for a change of procedure which would make such laxity impossible in the future, the Railway Board took up the general question of procedure and considered the measures required for the prevention of the irregularities noticed. The reforms which the Railway Board proposed to introduce were reported to the Secretary of State in August 1908. The revised orders were promulgated by the Railway Board to all Railway Administrations in February 1909, and they have since been made applicable also to open line works.

42. Measures for the safety of passengers in trains.—Owing to the frequency of outrages and thefts in running trains, the question of the measures to be adopted for the protection of passengers was referred for consideration to the Indian Railway Conference Association, who recommended the adoption of the following measures with special reference to mail trains :—

- (i) provision of the means of communication between passengers, guards and drivers in coaching stock at the earliest possible date ;
- (ii) removal of continuous foot-boards and horizontal hand-rails from 1st and 2nd class stock, and the horizontal hand-rails from all other classes ;
- (iii) provision of bars to lavatory windows designed to prevent ingress ;
- (iv) exhibition in all carriages fitted with the means of communication of the following notice, identical with that in use on English railways :—

Alarm signal :

To stop train—pull chain ;

Penalty for improper use, Rs. 50.

- (v) the fitting to windows of 1st and 2nd class carriages of metallic shutters on the “Lazy Tongs” principle, or some other efficient arrangement to prevent ingress through them ;
- (vi) the provision to all 1st and 2nd class carriages of door-bolts capable of being operated by passengers and of being unlocked by a special key in possession of the train staff ;
- (vii) permission to ladies travelling alone at night to take into their compartment one servant holding a lower class ticket ;

(viii) during night running a train servant, charged with the special duty of attending to the wants of passengers, to accompany the train.

The Railway Board directed the Administrations of State-worked railways to adopt the measures recommended and to carry out the recommendations of the Conference at as early a date as possible. They also directed them to deal with all passenger trains in the same way as mail trains, and to fit vacuum brakes to all coaching stock as soon as possible. These measures were commended for the consideration of Administrations of the Company-worked lines, who are now all acting on the recommendations of the Conference Association.

Railway Administrations were also reminded that, owing to the absence on some lines of the practice of enquiring, through the police, into the antecedents and character of applicants for service in the inferior grades, a large percentage of professional criminals and other undesirables found employment on railways and were to a large extent responsible for the petty crimes committed. The practice of obtaining the verification of the character of applicants for service through the police, existing for many years on the North Western State railway, was therefore recommended for adoption, and Railway Administrations were also asked to consider the advisability of having the work of conveyance of passengers' luggage at stations done by paid employés of the railway selected with the advice and assistance of the police. The replies received show that these measures have been adopted on some of the railways, and, where they have not, that measures equally efficient have been adopted.

43. Communication between passengers and the guard and driver of a train.—On the 31st December 1906 the number of carriages fitted with means of communication between passengers, guards and drivers in coaching stock was 2,350, against 15,219 not fitted ; at the end of 1909 these figures amounted to 11,223 and 8,384, respectively.

44. Indication boards outside compartments reserved on trains for women.—In 1906 orders were issued to attach, to the outside of all 3rd class compartments reserved on trains for women, indication boards inscribed " Women only " in English, Hindi and Urdu characters, and, where necessary, also in the vernacular of the district, which may be substituted for the Hindi inscription.

45. Automatic vacuum brake.—In 1906 the Committee of Locomotive and Carriage Superintendents drafted a set of rules for the working of the automatic vacuum brake for passenger trains. The rules as finally revised by the Indian Railway Conference Association were sanctioned by the Railway Board in January 1909 for adoption on railways.

The total number of locomotives and vehicles on Indian railways fitted with automatic vacuum brakes on the 31st December 1905 was 3,016 and 14,999, or 51.87 and 11.42 per cent, respectively, of the total stock. At the end of 1909 these figures amounted to 4,846 and 54,054, or 68.99 and 33.03 per cent, respectively, of the total stock, leaving 2,178 locomotives and

109,613 vehicles to be fitted. Of the latter, 4,276 were coaching vehicles and 105,337 goods vehicles, which represented 21·81 per cent of the total coaching stock and 73·12 per cent of the total goods stock.

46. Train signalling with automatic block instruments.—The enquiry into the serious collision which occurred on the 6th May 1908 between Ghaziabad and Dasna stations on the Oudh and Rohilkhand State railway having shown that, under certain conditions, it is possible for two contiguous stations fitted with the Tyers' tablet instruments each to obtain a tablet for the same section at the same time, the Railway Board directed that a Committee of electrical experts should assemble to consider and report whether, if these instruments are properly worked, it could be possible for two tablets or tokens for the same sections of line to be abstracted simultaneously from two connected instruments; also whether these machines are liable to be so affected by outside influences as to permit of tablets being simultaneously removed from the connected instruments at each end of a section, even though they are worked strictly according to the prescribed regulations, and whether it is possible for a tablet or token to be obtained at one end of a section without the permission or knowledge of the person working the connected machine at the other end of the section, who, according to rules, is the only person authorised to permit the removal of the tablet. The Committee were also directed to consider what precautions are necessary to prevent the illegitimate removal of a tablet, and whether there are other tablet instruments in use on Indian railways which are liable to the same defects in working as the Tyers' instruments, and, if there are, what steps should be taken to remedy the defects.

A summary of the results of the Committee of enquiry, together with the opinions of Railway Administrations on whose railways tablet instruments are in use, was later forwarded to the Indian Railway Conference Association for consideration and submission of such recommendations as would give practical effect to conditions which will ensure the safe working of tablet instruments.

The recommendations of the Association having been received and considered, rules for the working of token instruments have been issued for adoption on railways.

At the end of 1905 there were 968 stations on the railways in India at which block instruments were used for train signalling; at the close of the year 1909 the number had risen to 1,716.

47. Standard set of Line-clear forms for all railways.—Experience having shown that the Line-clear tickets in use for trains running in opposite directions were not sufficiently distinct one from the other, the question of revising these forms so as to overcome this objection and to afford an immediate and visual indication to drivers of the direction to which they respectively applied, was referred to the Indian Railway Conference Association for consideration, the desirability of having a uniform set of forms on all railways being, at the same time, pressed on the Association.

The question was accordingly discussed at a special meeting of the Conference, and a standard set of forms markedly distinct for opposite directions was drawn up and recommended for adoption, and sanctioned by the Railway Board in May 1908.

48. Extension of the use of coal.—In paragraph 92, Part I, of the Summary of Lord Curzon's administration of Indian railways, reference was made to the Railway Board having authorised the adoption of certain lower minimum rates for the carriage of coal, in lieu of the then existing minimum of one-tenth of a pie per maund, on railways for which minima had been prescribed. This reduction of freight charges on coal has had the effect desired of extending the use of coal in areas hitherto entirely dependent on wood supplies.

49. Supply of coal.—The slump in the coal trade has not been without its beneficial effect on Indian railways.

The high prices which were maintained during 1908, and which were so large a factor in the increased working expenses of railways for that year, have recently shown a general decline.

The opening up of the Bokharo-Ramgarh fields, the agreement for working which was recently sanctioned by the Secretary of State, will afford another source of supply, and should help to keep down the cost of fuel for the railways in the vicinity of these coalfields.

50. Grain Elevators in India.—The expansion of the port of Karachi and the growth of wheat cultivation in the Punjab having indicated that, at no distant date, the North Western State railway would, under the existing conditions of trade, have to deal with a greatly enlarged wheat export traffic, it was considered that an enquiry should be made, in anticipation of this event, as to the best way of meeting the future reasonable demands of trade, and, if possible, of avoiding the ultimate expenditure of a large amount of capital to meet the exigencies of the very heavy, but short, rush of the annual grain traffic.

The Director General of Commercial Intelligence was of opinion that the introduction of the "Elevator System" of dealing with wheat would meet the difficulties of the case, and would also be of general benefit both to the merchant and the cultivator. It was accordingly arranged, in March 1909,

* Mr. W. H. Wood, Senior Member, Railway Board.

Mr. S. Finney, C.I.E., Member, Railway Board.

Mr. H. P. Burt, C.I.E., Manager, North Western railway.

Mr. F. Nöel-Paton, Director General, Commercial Intelligence.

Captain G. F. Osborne, R.E., Secretary.

that the question should be investigated by an informal Committee* to meet at Lahore and proceed first to some of the more important wheat growing centres in the Punjab and then on to Karachi.

The Committee was asked to consider—

- (1) the causes of the present rushes of wheat traffic from the Punjab to Karachi;
- (2) the possibility of developing a steady wheat traffic throughout the year;
- (3) the possibility of increasing the capacity of the port of Karachi and securing the more rapid turn round of railway rolling-stock by the provision of Elevators at that port;

- (4) whether the "Elevator System" would tend to secure the object aimed at in (2) above, and
- (5) any incidental points that arose which the Committee may think it useful to report on.

In August 1909 the Committee submitted its report. The conclusions arrived at were to the effect that—

- (i) the annual rush of grain to Karachi was due to two main causes—
 - (a) growers are obliged to sell at a particular time every year to meet their financial obligations, and
 - (b) this time corresponds with a general lowness of stocks in importing countries and consequent highness in prices;
- (ii) that the possibility of developing a steady wheat traffic throughout the year was small for the reasons given in (i), (a) and (b), above;
- (iii) that the provision of a suitable Grain Elevator at Karachi would increase the capacity of the port and secure the more rapid turn round of rolling-stock;
- (iv) that so far as the present volume of trade is concerned the "Elevator System" would not tend to secure a steady wheat traffic throughout the year, as the demand for prompt conveyance from up-country to Karachi does not arise from want of storage, but for the reasons given in (i) above;
- (v) in regard to incidental points that arose, the Committee made certain subsidiary recommendations as regards the provision of storage accommodation, priority of registration of applications for wagons at despatching stations, and additional traffic facilities on the North Western State railway.

Three, out of four, members of the Committee were unanimous in their views; but the fourth member, Mr. Nöel-Paton, made certain reservations, the more important of which were to the effect that he disagreed with the line of argument adopted by the majority in the reply to question No. (1). He agreed to the reply to question No. (2), except that he was of opinion that an increase of wheat available for export would affect the amount exported in the comparatively slack season to a far greater extent than it would affect the busy season. He was also strongly of opinion that it was the duty of Railway Administrations to participate in the installation of Elevators.

The Railway Board agreed with the majority of the Committee, and the Government of India, in the Commerce and Industry and Revenue and Agricultural Departments, accepted the views of the Committee and of the Railway Board, and considered that the papers disclosed no case for asking the railway authorities to provide Grain Elevators up-country; but that, in view of the great facilities in dealing with grain that the "Elevator System" affords, it is desirable that the Port Trust should take up the question of providing an installation at Karachi.

Various enquiries from Local Governments and Chambers of Commerce regarding the report having been received, it was published and issued in June 1910.

51. Experimental troop and hospital trains.—In August 1909 meetings were held between the Manager, North Western State railway, the Principal Medical Officer, Bombay Brigade, and an officer representing the Quarter Master General's Division, to discuss arrangements necessary for providing military hospital trains and the possibility of running ordinary troop trains provided with intercommunication between vehicles.

As a result of these discussions a train—a special feature of which was that it provided accommodation for a coffee shop and hospital and medical staff—was fitted up by the North Western State railway with intercommunication between vehicles and other necessary equipment, and, taking advantage of the then impending movement of troops from Peshawar to Shahjahanpur and Shahjahanpur to Calcutta in December 1909, an interesting experiment was carried out with the train with a view to seeing how far the arrangement conduced to the comfort and convenience of troops.

The experiment was, on the whole, successful, and the arrangements made, especially those in connection with the coffee shop, proved very popular with the troops. Other Railway Administrations who have "ambulance" carriages with through communication on their lines have been informed of the results of the experiments made on the North Western State railway, and it has been suggested that similar arrangements for running ordinary troop and military hospital trains might, in certain cases, be possible on the railways under their administration.

52. Working of motor road-trains to serve as feeders to railways.—Motor trains suitable for road-traction on the Renard system have met with a certain amount of success in England and on the continent; and, with a view to giving a practical trial to this system of road-traction, the Railway Board arranged to carry out certain experiments—

- (a) on a mountain road, for which the Gauhati-Shillong route was selected, and
- (b) in the plains, for which the Moradabad-Sambhal road in Oudh was chosen.

Both these experiments proved that the Renard system is, after certain minor defects have been remedied, a practical one. But it seems unlikely that such mechanical road-traction can compete at present with the ordinary carts and tongas of the country, except where labour is scarce and animal-traction is difficult to provide. The road between Gauhati and Shillong seems to offer fair chances of success for a mechanical road transport service.

53. Indian Railway Conference Association.—The appointment of a "whole-time" Secretary to the Association, with necessary office establishment, was sanctioned by the Secretary of State in November 1906, and the Association was at the same time empowered to incur expenditure connected with its working up to an annual maximum of Rs. 40,000.

54. General Classification of Goods.—The Indian Railway Conference Association, at their meetings at Simla from 23rd September to 7th October 1907, dealt specially with the question of the revision and simplification of the existing goods tariff. It adopted the Simplification Committee's report, which

exhibited in draft a portion of a simplified tariff drawn up on the lines decided upon by the Committee which met at Delhi in 1905, and decided that the final report of the Simplification Committee, when submitted, should be printed and circulated by the Secretary of the Association for the consideration of Railway Administrations. At their meeting in October 1908 the Indian Railway Conference Association approved of a draft revised goods classification, and resolved that it should be circulated to the Administrations of all railways for remarks. The replies of Railway Administrations to this reference having been received, they were dealt with by a Committee in April 1909. The details of the tariff were further considered and revised at the Conference meeting of September and October 1909, and it was subsequently decided by the Railway Board that the General Classification as finally revised should be adopted on railways from 1st July 1910.

55. Strikes and Boards of Conciliation.—Several small strikes of different classes of employés occurred during the years 1906 and 1907 on certain lines. The discontent prevailing on the North Western State and the Bengal and North-Western railways was removed without inconvenience to the public, but that on the Eastern Bengal State railway culminated in an extensive strike on the part of native drivers and firemen and caused a temporary dislocation of goods traffic. In the latter case the temporary employment of soldiers, who had previously received some training as drivers or firemen on Indian railways, served materially to bring the strike to a close.

On the East Indian railway the European and Eurasian drivers of the Howrah-Jhajha district, after submitting a lengthy list of grievances, struck work in November 1907, and were joined to a large extent by the traffic staff. The strike, extending to other districts, ultimately involved practically the whole line. This strike was the most serious in the history of railways in India, and for a time completely dislocated traffic generally and the trade of Calcutta in particular. It was terminated only by the appointment by the Government of India of a special Board of Conciliation, (based on the lines of the Boards introduced in England), to consider the representations of the men. The Conciliation Board dealt mainly with the questions of (i) higher pay or mileage allowance, (ii) extra pay for working overtime and on holidays, and (iii) improved leave rules.

A strike of Goods drivers commenced on May 23rd, 1909, at Arkonam station on the Madras and Southern Mahratta railway, which rapidly developed into a general strike of all drivers on the broad gauge section of the line. The train service was disorganised for a few days, but the Administration, by engaging new hands and transferring men from the metre gauge section, succeeded in restoring complete regularity in both passenger and goods services by June 12th. The strike finally collapsed on July 2nd, after a public meeting in Madras had adversely criticised the methods of the strikers. The men formulated no grievances until after the commencement of the strike; claims for better pay and allowances and leave rules being definitely put forward only on May 27th at a meeting with the Agent.

56. Post Offices at railway stations.—Owing to the attitude of the Southern Punjab Railway Company when asked to provide buildings for Post

Offices at certain stations on their line, the Government of India asked the Secretary of State that in future contracts for the construction of railways in India by Companies, a clause might be inserted providing for the construction, at the cost of Capital, of accommodation at railway stations for Post Offices and quarters for the postal staff, a rental at a rate not exceeding $7\frac{1}{2}$ per cent. per annum being allowed to the railway and included in its gross earnings.

The Secretary of State in reply stated that a clause to the above effect would be included in all future contracts.

57. Supply of rolling-stock to meet increased demands of traffic during recent years.—In the Summary of Lord Curzon's administration of Railways, Part II, paragraph 110, a reference is made to this subject. The question of insufficiency or otherwise of rolling-stock on Indian railways had, for a long time, been receiving the attention of the Government of India. Since the Railway Board was formed the Members have given it their full consideration. In their memorandum, which was published in the *Gazette of India*, dated 24th March 1906, they publicly expressed their view that the Indian railways as a whole were then below what should be the standard of equipment of rolling-stock for present requirements.

The question may be said to have reached its climax in 1906-07. Although the funds sanctioned for the provision of rolling-stock had of late years been considerably augmented, the boom in trade in that year served to accentuate the shortage in wagons which still existed. So great was the outcry that the Secretary of State sanctioned a special additional grant of one million pounds sterling for additional rolling-stock, over and above the provision in the sanctioned Programme. All this additional stock was placed on the line in due course, and demands by the public for more rolling-stock are now seldom heard. This is no doubt partly due to the subsequent years being years of depressed trade, but it is also largely due to the increased supply of wagons.

The demand now is for improved facilities for handling the wagons, such as remodelled yards, facilities for repairing stock, signalling arrangements, etc., rather than for more vehicles. This accounts for the decreasing amounts which have been sanctioned for actual rolling-stock during 1908 and 1909 and for a corresponding increase in the provision for open line works.

The position in regard to rolling-stock is shown in the two statements below—the first of which gives the actual capital funds allotted for rolling-stock during the five years of Lord Minto's administration, while the second shows the amounts of estimates sanctioned during these years. It will, of course, be understood that delivery of, and payment for, stock sanctioned during one year may very likely not take place till the subsequent year or even later.

Statement I.

Rolling-stock grants on open lines of railways during the five years ending 1910-11.

1906-07	...	...	...	... Rs. 382 lakhs.
1907-08	...	...	...	... „ $602\frac{3}{4}$ „
1908-09	...	...	...	... „ $547\frac{3}{4}$ „
1909-10	...	...	...	... „ $579\frac{1}{4}$ „
1910-11	...	...	...	... „ $465\frac{3}{4}$ „

Statement II.

Estimated cost of additional rolling-stock sanctioned by the Railway Board, (excluding stock sanctioned for first equipment of new lines of railways and the amount of debits to Capital on account of improvements to rolling-stock), from 1st September 1905 to 31st July 1910.

Railways.	1905 (from 1st September to 31st De- cember).	1906.	1907.	1908.	1909.	1910 (to 31st July).	Total.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
North Western State	64,35,555	33,25,166	2,38,25,687	59,50,399	34,97,525	76,51,920 5,06,86,252	
Oudh and Rohilkhand State	11,46,429	14,12,534	17,52,897	35,07,798	1,80,760 80,00,418	
Eastern Bengal State	19,24,675	23,54,066	54,39,280	41,89,785	10,596	20,15,275 1,58,83,677	
East Indian	31,58,000	40,07,260	50,74,825	84,85,323	1,11,42,295	53,803 3,18,71,506	
Bengal-Nagpur	17,62,500	1,55,24,528	14,86,558	23,90,060	30,17,300 2,41,80,946	
Great Indian Peninsula and Indian Midland	55,75,000	6,94,854	1,58,90,986	1,39,26,575	64,800	1,91,851	3,63,44,066	
Madras and Southern Mahratta	... 12,89,905	25,000	6,80,645	38,29,520	26,80,726	28,900	85,34,696	
Bombay, Baroda and Central India	8,663	70,97,136	86,19,524	11,96,000	15,65,066	1,34,86,389	
Rajputana-Malwa	52,19,450	12,83,175	5,29,723	6,15,536	76,47,884	
Mysore State	6,10,036	...	5,65,829	...	11,75,365	
Bengal and North-Western and Tihoot State.	28,360	4,13,200	24,62,550	5,14,401	16,12,451	...	50,25,962	
Rohilkund and Kumaon and Lucknow-Bareilly.	2,82,000	3,91,700	...	...	6,73,700	
Burma	1,66,250	46,35,155	6,85,533	3,22,772	6,60,940	...	64,70,650
South Indian	15,000	15,000	12,34,350	25,05,060	28,47,800	13,89,800	80,07,010
Satpura	1,08,793	2,990	1,11,783
Assam-Bengal	4,73,850	1,88,510	11,65,618	17,43,250	11,67,785	37,600	47,76,608
Bengal Dooars	21,120	1,184	...	22,304
Cooch Behar State	7,530	7,530
Gaskwar's Dabhoi and Rajpipla	94,227	...	66,423	1,60,660
Shahdara (Delhi)-Saharanpur	18,306	18,306
Total	...	1,90,61,595	1,92,80,066	8,61,11,440	5,05,72,117	3,18,09,688	1,67,50,801	22,30,85,702

58. Locomotive engines and rolling-stock on Indian railways, 1904-09.—The following state the years 1904 and 1909, and the additions made thereto

Railways.	STOCK ON 31ST DECEMBER 1904.			1905.			1906.			ADDITIONS		
	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.			
<i>5' 6" gauge.</i>												
Bengal Central	27	109	507	-27	-109	-507	...	...	...
Bengal-Nagpur	231	719	7,340	60	...	281	1	45	253
Bombay, Baroda and Central India	217	498	5,289	2	2	...	1	12	25
Eastern Bengal State	147	510	3,419	39	123	713	14	7	6
East Indian	915	1,776	17,986	97	-5	113	-6	120	1,280
Great Indian Peninsula	821	1,665	12,130	2	45	452	39	87	162
Madras	256	950	5,166	10	11	3	6	17	...
Madras and Southern Mahratta
Nizam's Guaranteed State	61	147	1,051	...	-2	...	...	1	50
North Western State	719	1,895	12,040	37	30	56	64	153	1,290
Oudh and Rohilkhand State	202	791	5,688	3	1	2	...	7	4
South Indian
Total	...	3,596	9,060	70,516	163	96	1,063	118	449	8,010		
<i>5' 3½" gauge.</i>												
Assam-Bengal	72	224	1,827	5	20	1	10	7	203
Bengal and North-Western	225	731	6,236	15	87	245	31	99	51
Bengal Dooars	10	48	363	...	...	...	...	...	...
Bhavnagar-Gondal-Junagad-Porbandar	87	237	1,066	...	...	...	...	...	...
Burma	286	823	5,155	15	-8	170	8	53	105
Deoghar	4	12	8	-2	...	2	...	...	...
Dibrus-Sadiya	22	61	1,110	...	2	...	4	5	5
Eastern Bengal State	183	614	3,670	4	2	-43	18	-17	221
Hyderabad-Godavari Valley	55	124	856	...	...	1	...	...	80
Jodhpur-Bikaner	48	170	968	...	12	8	...	...	51
Madras and Southern Mahratta
Morvi	4	58	57	1	...	15
Nilgiri and Shoranur-Cochin	16	36	158	2	6	27	...	5	1
Rajputana-Malwa	495	1,428	7,733	13	-5	532	...	24	-2
Rohilkund and Kumaon	40	159	1,143	...	4	97	8	43	162
South Indian	218	979	3,688	10	86	204	20	32	138
Southern Mahratta	288	1,008	4,906	-1	...	357	...	3	144
Udaipur-Chitorgarh	3	24	37	..	...	...	...	...	...
Total	...	1,792	6,678	38,864	65	209	1,658	95	254	1,174		

N.B.— Brake-vans have been included under "Coaching" or "Goods" according as they are used

ment shows the number of engines and coaching and goods vehicles on all the railways in India during each of the years 1905 to 1909.

DURING

									TOTAL STOCK ON 31ST DECEMBER 1909.			TOTAL ADDITIONS FROM 1ST JANUARY 1905 TO 31ST DECEMBER 1909.		
1907.			1908.			1909			Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.
Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.
...	...	...	...	...	...	...	...	...	...	...	...	-27	-109	-507
18	26	865	66	34	1,712	19	40	503	889	864	10,924	158	145	3,584
15	28	36	15	30	471	...	54	772	250	624	6,543	83	126	1,804
6	52	544	6	4	509	19	17	97	231	718	5,288	84	203	1,869
-3	61	1,363	49	173	1,072	83	28	1,486	1,075	2,153	28,250	180	877	5,264
26	44	161	57	27	789	1	2	669	916	1,870	14,368	125	205	2,233
26	34	230	-298	-1,012	-5,399	...	...	...	...	...	...	-256	-950	-5,166
...	...	...	218	668	4,138	6	5	192	224	673	4,880	234	673	4,890
...	...	27	1	11	323	...	17	-2	62	174	1,449	1	27	398
45	171	1,054	71	69	2,551	95	367	3,401	1,031	2,625	20,882	812	790	8,292
3	1	...	-1	4	407	...	38	242	207	887	6,293	5	46	655
...	..	...	88	286	1,384	14	17	77	102	303	1,461	102	303	1,461
181	417	4,800	272	294	7,957	237	580	7,387	4,517	10,896	94,233	921	1,886	28,717
...	8	210	8	14	102	7	12	399	102	285	2,742	30	61	915
18	70	71	39	...	421	...	54	295	328	1,041	7,319	103	310	1,083
...	...	...	...	...	...	...	...	...	10	48	363	...	...	...
...	9	...	...	5	...	...	13	...	37	264	1,006	...	27	...
7	65	596	37	25	413	2	31	450	305	939	6,889	69	166	1,784
...	...	...	...	-2	1	...	...	...	2	10	11	-2	-2	3
...	4	...	...	...	110	...	...	60	26	72	1,285	4	11	175
6	61	90	23	11	-13	20	83	179	199	744	4,099	66	130	429
...	...	80	...	...	...	...	10	-10	55	184	1,007	...	10	151
6	7	60	...	6	57	2	21	46	56	216	1,190	8	46	222
...	...	...	272	932	6,137	1	24	-6	273	956	6,181	273	956	6,181
...	...	...	...	2	...	1	...	5	54	74	5	54	74	...
...	...	...	-18	-47	-181	...	...	...	...	...	...	-16	-36	-153
16	-27	12	11	35	178	14	14	161	489	1,469	8,614	54	41	881
6	...	71	-8	-12	11	...	-9	26	51	191	1,510	11	32	367
...	49	49	6	12	26	14	38	-37	268	1,146	4,013	50	167	360
7	...	5	-244	-1,011	-5,412	...	...	...	...	...	...	-238	-1,008	-4,906
...	...	...	...	...	...	...	-1	9	8	23	46	...	-1	9
66	286	1,244	191	-32	1,852	60	297	1,572	2,209	7,642	46,359	417	964	7,495

exclusively on passenger service, or indiscriminately on passenger, goods or mixed services.

The following statement shows the number of engines and coaching and goods vehicles on all the years 1905 to

Railways.	Stock on 31st December 1904.			1905.			1906.			ADDITIONS		
	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.			
<i>2' 6" gauge.</i>												
Baraset-Basirhat Light	3	13	25	...	10	...	10	...	...
Barsi Light	5	2	...	...	...	26	32	26	32	32
Bukhtiarpore-Behar Light	8	24	28	...	...	—5	6	—5	6	6
Cutch	2	3	18	1	...	...
Dholpur-Bari
Eastern Bengal State and Cooch Behar State	15	56	278	...	...	8	...	...	...	...	...	1
Gaekwar's Dabhoi and Rajpipla	11	45	218	...	...	...	...	...	...	—3	1	1
Gondia-Chanda, Jubbulpore-Gondia extension, Purulia-Ranchi and Raipur-Dhamtari.	17	47	253	2	6	50	10	20	40	20	40	40
Kalka-Simla State	13	72	186	11	...	10	...	...	...	14	21	21
Kohat-Thal and Nowshera-Durgai State	27	64	456	3	2	—11	...	...	...	...	...	...
Morappur-Dharmapuri and Tirupattur-Krishnagiri.	3	11	24	8	10	24	...	...	...
Morvi	7	52	70	—1	—1	...	—1	...	...	...
Mourbanj	9	12	...	...	...	...	...
Parlakimedi Light	3	5	19	...	...	...	...	...	...	...
Powayan Light	5	18	71	...	...	...	...	...	...	...
Shahdara (Delhi)-Saharanpur Light
Tarakeshwar-Magia Light	4	22	88	...	...	6	1	...	...	...
Tezapore-Balipara Light	8	14	50	...	...	...	...	1	...	...
Total	...	113	426	23	43	142	14	73	125			
<i>2' 0" gauge.</i>												
Dardot State	7	9	326	...	...	...	...	—9	...	...
Darjeeling-Himalayan	18	91	244	...	6	4	—1	2	6	6
Gwalior Light	15	59	186	...	4	...	...	6	5	5
Howrah-Amra Light	7	49	89	...	10	...	4	12	...	...
Howrah-Sheakhalia Light	4	20	8	...	...	...	...	...	...	...
Jorhat State	7	19	75	...	3	1	...	...	...	...
Matheran
Total	...	58	247	...	23	5	8	11	11			
TOTAL OF ALL GAUGES	...	5,559	16,411	111,887	256	871	2,863	230	787	4,820		

N.B.—Brake-vans have been included under "Coaching" or "Goods" according as

railways in India during the years 1904 and 1909, and the additions made thereto during each of the 1909—concl.

DURING												TOTAL STOCK ON 31ST DECEMBER 1909.			TOTAL ADDITIONS FROM 1st JANUARY 1905 TO 31st DECEMBER 1909.		
1907.			1908.			1909.											
Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.	Engines.	Coaching.	Goods.									
1	10	-6	1	12	...	5	45	19	5	45	19		
..	8	40	5	...	2	...	...	...	12	41	186	7	84	74		
1	1	8	...	...	...	...	...	6	4	20	48	1	-4	20		
..	...	10	...	4	...	1	1	1	4	8	29	4	8	29			
..	...	...	3	5	42	...	...	...	3	5	42	3	5	42		
..	...	13	...	...	...	-2	...	-10	13	56	230	-2	...	12		
..	-1	27	...	8	10	2	2	1	13	51	257	2	6	89			
11	11	212	8	41	201	20	48	165	63	168	921	46	121	668			
..	...	-1	-2	7	-6	13	-7	12	35	86	172	22	14	86			
..	...	1	...	...	...	...	...	...	29	66	445	2	2	-11		
..	...	...	...	...	...	...	...	...	6	21	48	6	21	48		
..	...	...	...	...	...	...	...	...	5	51	70	-2	-1	...		
..	...	4	...	2	4	...	...	...	3	11	20	3	11	20		
..	...	...	...	...	...	...	...	...	3	5	19	...	...	...
..	...	...	...	...	...	...	...	...	5	18	71	...	...	...
8	22	159	...	-1	30	...	6	...	8	27	180	8	27	189			
..	...	6	...	...	...	1	...	...	6	22	50	2	...	12		
..	...	2	...	...	...	...	-8	8	3	12	55	...	-2	5		
..	
21	41	480	8	76	277	86	54	178	220	718	2,881	107	287	1,202			
..	
..	...	10	2	...	...	...	...	...	9	...	886	2	-9	10		
..	-2	-1	..	-1	...	-1	12	-9	16	108	244	-2	17	...			
8	6	56	..	..	21	2	...	14	20	75	282	5	16	96		
1	..	10	..	6	8	3	19	14	15	96	71	8	47	82			
..	...	...	..	1	1	..	3	..	4	24	9	..	4	1		
2	-3	4	..	..	-1	..	2	1	9	21	60	2	2	5		
5	32	24	..	-2	2	..	2	..	5	82	26	5	82	26			
..	
11	83	103	2	4	31	4	38	20	78	356	998	20	109	170			
229	727	6,127	413	842	10,117	897	969	9,157	7,024	19,607	144,471	1,465	8,196	32,584			

they are used exclusively on passenger service, or indiscriminately on passenger, goods, or mixed services.

59. Improvements in rolling-stock ; Restaurant cars ; Lighting of carriages ; Latrine accommodation in 3rd class carriages.—The design and general equipment of coaching stock has been greatly improved in recent years. The modern first class bogie carriage is fitted with electric lights and fans and contains excellent lavatory accommodation. Restaurant cars are now attached to most of the mail trains on main lines. The third class passenger has now the advantage of conveniences which he would not have dreamed of ten years ago. In a widely extended railway system, however, such as that of India, it is of course inevitable that old-fashioned stock should continue to run for many years, though such stock is relegated as far as possible to branch lines.

In 1908 the Railway Board issued instructions to all Managers of State railways to fit all new 1st and 2nd class carriages of their lines with electric lights on Stone's system and with fans.

Many third class carriages are also fitted with electric light, and all new third class coaches, except short-distance or local-service stock, are fitted with latrines.

At the end of 1905, 9,782 carriages were fitted with gas and 648 with electric lights, leaving 7,403 carriages to be so furnished; while at the close of 1909 there were 11,987 carriages provided with gas and 3,250 with electric lights, the number of carriages remaining unfitted being 5,071.

60. Purchase of rolling-stock from Indian railways in time of war.—With reference to a proposal of the Army Council regarding arrangements which would enable them to purchase, at short notice in time of war, a certain quantity of metre gauge rolling-stock in India to facilitate military operations outside India, the Railway Board ascertained from the Administrations of the principal metre gauge railways the extent to which they could co-operate, and they were satisfied that the requirements of the Army Council, namely, for 30 engines, 1,500 trucks and 150 passenger coaches, could be readily met by purchase on certain terms. The Secretary of State was duly informed in July 1906.

61. Importation direct by manufacturing firms of rolling-stock manufactured out of India.—The shortage of wagons on Indian railways in 1906 attracted the attention of English manufacturing firms, and, in February 1907, Messrs. Ewing and Company, Calcutta, submitted an offer on behalf of the Leeds Forge Company, Leeds, for the supply, during 1907 and 1908, of 7,000 sets of pressed steel parts, etc., for wagons ready for erection in India. The proposal was referred to the Director General of Stores, London, for opinion. Subsequently, in June 1907, Messrs. Ewing and Company made a definite offer on behalf of the Leeds Forge Company for the supply, f. o. b. in England, at the rate of 300 sets per month, of the necessary steel and iron work for entire wagons, including underframes, bodies, wheels, axles, springs, brake gear, etc., complete. They were informed that, after correspondence with the India Office, the Railway Board were advised that the offer of the Leeds Forge Company compared unfavourably with what could be arranged by the India Office themselves to meet the sanctioned requirements of State railways. The Railway Board were, therefore, unable to avail themselves of the offer of the Leeds Forge Company.

62. Growth of local manufacture of rolling-stock and other railway stores.—In accordance with the declared policy of the Government of India, the question of the best method of encouraging local manufactures, consistent with the interests of Railway Administrations, has been before the Railway Board for some time.

The facilities existing in the workshops of various firms of manufacturing engineers in India have been considerably enlarged in recent years; and in September 1905, the Railway Board, after duly considering representations received from several such firms asking that they might be given an opportunity of tendering for the construction of wagon frames and bodies in this country, issued instructions to Managers of State railways that tenders should be called for publicly in India for the supply of frames and bodies of 25 per cent of the goods stock sanctioned for State railways, the requisite wheels, axles, springs and drawbars to complete the wagons being indented for from England and supplied by the Railway Administration to the firms whose tenders are accepted. Under these orders about 1,600 wagon frames and bodies were ordered by the three State-worked railways to be built up to the end of 1909 by private firms in India from imported raw materials.

The arrangement entered into, in 1897, by the Government of India with the Bengal Iron and Steel Company for the supply, by the latter to the State railways, of 10,000 tons of pig iron and castings annually, for a period of 10 years, came to an end on the 31st March 1907. Difficulties having been experienced in later years by the Railway Board in making up this annual order of 10,000 tons, and the future requirements of railways (State-worked and Company-worked) in India, as far as could be foreseen, making a very insignificant total, the Railway Board were unable to recommend the renewal of the arrangement for a further period. In coming to this conclusion the Railway Board were guided by the probable necessity of also patronizing manufactures from other sources, e. g. Tata's Iron Works,—a distribution of patronage which would have been impossible if the arrangement with the Bengal Iron and Steel Company had been renewed for a further period. This conclusion has been approved by the Government of India, and the Secretary of State was informed accordingly.

In 1905 the Bengal Iron and Steel Company, Limited, entered into a contract with the Secretary of State for India for the manufacture of steel rails and rolled sections at their Barakar works, under the terms of which the latter was required to pay to the Company an annual subsidy not exceeding £1,500, subject to a reduction of Rs. 3 for every ton of steel rails or bars purchased by, or on behalf of, Government. Managers and Engineers-in-Chief of State railways were accordingly requested to utilize steel of local manufacture so far as it was suitable for the works in their charge. Not long afterwards, however, the Company found themselves unable to continue this industry and they decided to close their steel works.

In order to place the inspection of manufactures in India on a more satisfactory footing, an officer was appointed, and located at Calcutta, with the designation of "Superintendent of Local Manufactures", to inspect work during the process of manufacture. Subsequently another officer was appointed in a similar capacity in Bombay.

It has further been agreed that these two Superintendents are also to inspect and test important articles of iron and steel of local manufacture for other

Government Departments as well as for State railways. These arrangements for placing the inspection of locally manufactured stores on a more satisfactory basis were made in connection with the issue of the revised rules for the purchase of stores promulgated by the Government of India in July 1909, the effect of which has been to remove certain of the limitations which restricted purchase in the local market. The conditions of local manufacture have further been brought more into line with those in England by the preparation of revised specifications, which have been completed by the Railway Board and will shortly be submitted to the Secretary of State for sanction.

63. Establishment by an English Company of workshops in India for the construction of rolling-stock.—The inducements offered to the various firms of manufacturing engineers in India for the supply and construction of the frames and bodies of 25 per cent. of the goods stock sanctioned for State railways attracted the attention of an influential English Company, who, in June 1907, submitted a proposal through Messrs. Ewing & Company, Calcutta. This English Company were desirous of starting workshops in India for building railway wagons and other railway vehicles, provided that they received a general assurance that Government would place orders with them if they could produce rolling-stock on terms comparing favourably as to quality of work, price and delivery, with those of other English companies and existing local firms. They also asked for the removal of the present restrictions in regard to the use of raw materials by the builders, and to the inclusion of the supply of wheels, axles and springs, etc., hitherto obtained only through the India Office, in order to enable them to import all that it was necessary to obtain from England and to manufacture the rest in India. The Railway Board saw no objection to an assurance being given that, as at present arranged, tenders for 25 per cent of all wagon stock sanctioned for State-worked railways will always be called for in India, and that the tender of the English Company, if submitted, would receive due consideration along with the others but without any undue preference. The Railway Board also considered that there would be substantial advantages to be gained by the removal of the existing restrictions in regard to raw materials and the supply of wheels, axles and springs, etc., which would enable orders to be given locally for *complete* wagons. These latter proposals were, however, not approved by the Secretary of State.

The Company subsequently asked for definite promises on the part of the Railway Board of a very large amount of work yearly; so much so, indeed, that, had the proposals been accepted, contracts for the greater portion of the wagons required for State railways every year would have had to be given to this one firm. In fact the adoption of these proposals would have meant practically giving the firm a monopoly, and for this reason the Government of India were unable to assent to them.

64. Revision of schedule of dimensions of long bogie stock.—In the existing schedules of dimensions prescribing certain fixed maximum and minimum dimensions for rolling-stock, no limiting length of vehicle was laid down. The tendency continually to increase the dimensions of rolling-stock, especially the length of coaching vehicles, and the fact that the safety of the public was likely to be endangered by insufficient allowances on account of curvature of tracks and lurching of vehicles, made it imperative to

ascertain, by practical experiments, what are the maximum dimensions which allow of a safe and sufficient working clearance between fixed structures or passing vehicles.

It is clear that the maximum dimensions of rolling-stock are limited by existing physical conditions, such as distance apart of tracks, width of tunnels, etc., and the Railway Board considered it necessary to fix the dimensions so as to ensure that stock could be interchanged generally in traffic working between all railways of the same gauge. Extensive experiments were, therefore, carried out with long bogie vehicles over the principal railways in India, and a series of results were obtained which enabled the Board to lay down certain fixed maximum dimensions for long bogie stock of 5' 6" gauge. For metre gauge vehicles experiments of a similar nature are now gradually being carried out.

65. Standardization of locomotives.—The question of the standardization of locomotives of all gauges in India was first brought up in 1901, and, as the result of various conferences and communications with the Locomotive and Carriage and Wagon Superintendents and the Engineering Standards Committee in England, five designs were approved and circulated to the various Railway Administrations in 1905. In the following year arrangements were made for the Engineering Standards Committee on Locomotives to form themselves into a permanent body of advisers, in connection with the introduction of new standards of locomotives for India and the improvement of existing ones.

The third report of this body on locomotives was brought out in February 1910. It contains six standard designs of locomotives on the 5' 6" gauge and four of locomotives on the metre gauge, and embodies all previous standard locomotives with such improvements as have been suggested by experience in working them.

Although it is still necessary to purchase for Indian railways a large number of locomotives which are not of the standard designs, the number of standard engines in India is increasing yearly. In October 1909 there were 653 standard broad gauge and 367 standard metre gauge engines in running.

66. Standardization of small stores, metals, etc.—A preliminary standardization list of metals, tools, small stores, etc., was issued in 1904, and in 1905 the Director General of Stores, India Office, supplied Managers of State railways with the final list in which the India Store Dépot pattern numbers have been added. This list has now been included in the revised edition of the "Nomenclature and Classification of State Railway Stores," which was published in 1910.

67. Adoption of British standard sections of rails.—The attention of the Government of India having been drawn to the large variety of rail sections that have been brought into use on Indian railways and the great inconvenience that frequently results from this state of affairs, the Railway Board, in 1905, decided that the British standard sections of flat-footed rails, weighing from 20 lbs. to 100 lbs. per yard, which had been approved by the Engineering Standards Committee in England, should be definitely adopted on all State railways, and, in circulating that decision, desired that all Indian railways should also adopt them whenever possible. Designs

and particulars of the fastenings used with the more common of the above sections have also been furnished by the Director General of Stores, India Office, and circulated to Railway Administrations.

68. Design and inspection of signalling and interlocking installations.—In August 1906 the Railway Board circulated and ordered the adoption of a set of rules on this subject, which were compiled as a guide to Signal Manufacturers in meeting the requirements of railways and to Government Inspectors in passing the installations put up for ensuring safety to traffic. In January 1908 further supplementary rules were issued for the inspection of interlocking installations to ensure the adoption of a uniform system.

69. Supply of wooden sleepers.—The difficulties in meeting the demands of railways in India for timber sleepers from the forests of India are increasing every year, and endeavours are being made to supplement this supply by suitable sleepers from other sources. The hardwoods of Australia offered a useful field for investigation, and Mr. J. Adam, Executive Engineer, Railway Department, was in 1904 deputed by the Government of India for this purpose. In due course he submitted a report on the production of wood for sleeper purposes from Australia, and his deputation had the effect of placing Railway Administrations in touch with sellers of Australian timber sleepers. In the meantime representations were received by the Railway Board from firms dealing with Indian timber sleepers, and, with the object of checking an undue preference being shown to either market, the Board issued to Managers and Engineers-in-Chief of State railways a set of instructions laying down the procedure to be observed in the purchase of timber sleepers for State railways.

A large number of these Australian sleepers have been imported for State-worked railways in the last five years. The quality of the different classes of timber varies considerably, and, until quite recently, the better qualities had been regarded as durable and satisfactory in the Indian climate. During the last year, however, instances have come to light of such serious ravages having been made by white ants on Jarrah sleepers in certain parts of India that the suitability, under certain conditions, of these sleepers for India requires further investigation. The Railway Board have therefore appointed a Committee, on which the Australian Timber Trade is to be represented, to investigate the question of the durability of Jarrah and other Australian wood sleepers for Indian railways.

Timber for railway sleepers from the forests of India is practically limited to three species—deodar, sal and teak. The vast supply of inferior timbers has hitherto not been touched, as the wood is either too soft or liable to attack by decay and insect pests.

For some years past it has been evident that a method of artificial impregnation, which would render the sleeper impervious to white ants or decay, would open up fresh sources of supply. For these reasons the Railway Board are at present assisting in certain experiments with the Powellizing process, which seems to offer some chance of success.

70. Rent and maintenance of telegraph wires supplied to railways by the Government Telegraph Department.—The period of five years for which the all-round rate of Rs. 2-3-0 per mile of wire per mensem was extended

having expired, the Government of India in September 1907 decided that, with effect from the 1st January 1907, the rate of Rs. 2-3-0 per mile of wire per mensem would continue to be charged until further orders. At the instance of the Indian Railway Conference Association, the question whether a charge at this rate did not place an undue burden on railways was considered by Government, and it was decided, in December 1908, that, with effect from the 1st April 1909, the charge should be fixed at Rs. 2 per mile of wire and that this rate should continue in force until further orders.

71. Rent and maintenance charges for telegraph instruments supplied to railways by the Government Telegraph Department.—The period of five years for which it was ordered that an all-round rate of Rs. 4-8-0 per instrument per mensem should be charged for the rent and maintenance of telegraph instruments supplied to railways by the Government Telegraph Department having expired on the 31st December 1905, the Government of India, in May 1906, directed the continuance of the same rate for a further period of one year from the 1st January 1906. On the expiration of this period the Government of India decided that, with effect from 1st January 1907, the rate of Rs. 4-8-0 per instrument per mensem would continue to be charged until further orders.

72. Continuance of the existing system of management of telegraphs on the Madras section, Madras and Scuthern Mahratta railway.—Prior to the amalgamation of the Madras and Southern Mahratta railways the former railway owned a large portion of the telegraph wires and instruments, which it also maintained. On the purchase of the railway being effected the Company's telegraphs became the property of the State, and, according to the procedure followed in similar cases, the wires and instruments should have been taken over and maintained by the Government Telegraph Department and rented to the Company. The Government of India have, however, agreed to the continuance, for the present, on what is now known as the Madras section of the Madras and Southern Mahratta railway, of the system of management of telegraphs previously in force.

73. Acceleration of the delivery of the foreign mails in the Punjab.—For the conveyance of the inward foreign mails a combined postal and passenger train is run every week from Bombay to Ambala. Sanction was accorded in June 1906 to the extension of the Special direct to Lahore and to the running, when necessary, of a Special from Lahore to Jhelum or Rawalpindi in continuation.

74. Abolition of tolls on certain bridges on the East Indian, Oudh and Rohilkhand State, North Western State and South Indian railways.—In view of the delay and inconvenience to road traffic, which is inseparable from the collection of tolls, and the very small proportion which the yield of those tolls bears to the cost of the undermentioned bridges, it did not seem to the Directors of the East Indian Railway Company that the charge imposed on the public was worth maintaining. They accordingly recommended, on the motion of the United Provinces Government, that the roadways of the bridges over the Tonse river, and over the Jumna at Delhi and Allahabad, should be freed from tolls. The proposal was accepted by the Government of India, and, in February 1907, orders were issued abolishing the collection of tolls on these bridges.

Also on the representation of the Government of the United Provinces, and, in the case of the Ganges bridge at Cawnpore, of the Upper India Chamber of Commerce, the Government of India, in July 1907, sanctioned the abolition of tolls on the Dufferin bridge over the Ganges at Benares, the bridge over the Ganges between Lucknow and Cawnpore and the bridge over the Ramganga at Moradabad—all these bridges being the property of the Oudh and Rohilkhand State railway.

Later, on the recommendation of the Honourable the Agent to the Governor General and Chief Commissioner, North-West Frontier Province, the Government of India agreed to the boat-bridge over the Kabul river at Nowshera being declared free of tolls, and, as a consequence, the North Western State railway bridge, which is in close proximity to it and formed a convenient connection between Nowshera and Mardan Road, was also declared free with effect from January 1908, the cost of maintenance and the initial capital outlay entailed in the opening of the bridge to road traffic being met by the Local Administration.

In February of the same year it was decided to dismantle the bridge-of-boats over the Indus river at Khushalgarh, since the cost of maintenance exceeded the toll receipts, and to throw open the roadway of the newly constructed railway bridge to the public free of tolls, the cost of constructing the roadway and the approaches to it being paid jointly by the Governments of the Punjab and North-West Frontier Province. The whole cost of the maintenance of the roadway over the bridge and of the right bank approach will be defrayed by the North-West Frontier Province, while the approach on the Punjab side will be maintained from funds supplied by the Attock District Board.

In December 1909 sanction was given to the abolition of the toll of 3 pies which pedestrians were charged for making use of the footways of the Netravati bridge of the South Indian railway at Mangalore.

75. Customs arrangements at Viramgam Junction, Bombay, Baroda and Central India railway.—The establishment, in January 1904, of a customs line along the land frontier between Kathiawar and British India necessitated customs arrangements being made at the Viramgam Junction of the Bombay, Baroda and Central India railway.

76. Transit of opium from Sutna by rail.—To obviate the inconvenience experienced by the Rewah Durbar in having to send opium to the Sohagpur and Bandhogarh districts, the Bengal-Nagpur railway was, in 1906, included in the rules regarding the transit of opium by the Great Indian Peninsula and Rajputana-Malwa railways from one Native State to another in Central India and Rajputana.

77. Provision of special trains for Hon'ble Members of the Supreme Council.—With a view to obviate the inconvenience experienced by Hon'ble Members of Council when Railway Administrations are unable to attach their saloon carriages to mail trains, it was decided that, on such occasions, Hon'ble Members should have the privilege of ordering special trains for their own use.

78. Increase to the contract limit of rebate payable by the Bombay, Baroda and Central India Railway Company to the Tapti Valley,

Ahmedabad-Dholka and Ahmedabad-Parantij branch railways.—In order to ensure certain branch lines against possible loss being entailed by the adoption on those lines of the reduced goods rates and coaching fares introduced on the Bombay, Baroda and Central India railway (the working agency), the Secretary of State, in February 1908, sanctioned the contract limit of rebate payable to the Tapti Valley and Ahmedabad-Dholka Railway Companies from traffic interchanged with these lines towards making up a dividend of 4 per cent per annum, being raised from 10 per cent to a maximum of 45 per cent of the gross earnings from the traffic interchanged. The increased rebate to have effect from the 1st July 1908. Accordingly contracts were entered into between the Secretary of State for India and the Bombay, Baroda and Central India, Tapti Valley and Ahmedabad-Dholka Railway Companies, dated, respectively, the 10th July, the 12th November, and the 12th November, 1908, giving effect to the arrangement agreed upon for the increase of the rebate from interchanged traffic payable to the two latter Companies by the Bombay, Baroda and Central India Railway Company. The Bombay, Baroda and Central India Railway Company having also agreed to the present limit of rebate payable to the Ahmedabad-Parantij railway from interchanged traffic being increased so as to make up a dividend of 5 per cent, instead of 4 per cent as previously agreed to, an offer to this effect, subject to certain conditions, was made to the Branch Company and accepted by them, and provision for payment of the higher rate of interest has been made in the contract of the 2nd October 1908, between the Secretary of State and the Bombay, Baroda and Central India Railway Company, as from the close of the period during which interest shall be payable out of capital in respect of the Brahmakhed extension of the Ahmedabad-Parantij railway, which will probably be opened for traffic in June 1911.

79. Payment of an annual subsidy to the Tezpore-Balipara railway by the Tezpore Local Board.—Sanction was accorded in February 1909 to the continuance of the payment of a subsidy of Rs. 5,000 per annum to the Tezpore-Balipara railway by the Tezpore Local Board for a further period of 5 years from 1st April 1909. The subvention was vital to the railway, the earnings of which had suffered severely owing to the closure of the Borjuli siding by the owners.

80. Revised rules for the carriage of military traffic.—In order to simplify accounting, audit and correspondence, and to ensure full and rapid loading both in times of peace and war, the Army Department urged the introduction of a universal through vehicle-rate over all railway systems, both for goods and coaching traffic, in place of the complex system in force. The question was accordingly considered by the Indian Railway Conference Association at their meeting in September-October 1907, when a vehicle-rate was accepted. The rate applied to the carriage of troops, live stock, military stores and supplies, excluding coal and explosives which would continue to be carried at special rates. The revised vehicle-rates and the rules governing their application, as recommended by the Indian Railway Conference Association, were accepted by the Government of India and introduced with effect from the 1st January 1908. The rates have been in force as a tentative measure for a period of two years, and the question of slightly increasing the rates and making them permanent is at present under consideration.

81. Railway concessions to Native officers; mounted and company officers of the Imperial Service troops; and to non-commissioned officers and men of the Royal Navy, of the Royal Marines and of the British and Indian Army.—At the request of the Quarter Master General's Division, the Indian Railway Conference Association agreed—

- (i) to grant return second class tickets available for six months at single fares for Native officers of the Indian Army duly certified to be proceeding on leave of every description at their own expense;
- (ii) to extend to mounted and company officers of the Imperial Service troops attending classes of instruction, the concession of second class tickets at half second class fares for single journeys, and at single second class fares for return journeys.

Advantage was also taken by the Association, at the meeting of the Conference in 1907, to introduce uniformity in the concessions granted by railways to European and Native soldiers and their families, and it was agreed—

- (iii) to issue return tickets for six months at single fares, for all classes, to non-commissioned officers and men and their families—limited to six individuals—of the Royal Navy, of the Royal Marines and of the British Army, (including men serving in Army Departments and in other staff employ), certified to be proceeding on leave of every description at their own expense; and
- (iv) to issue third class return tickets, available for six months, at single fares, to non-commissioned officers and men and their families—limited to six individuals—of the Indian Army duly certified to be proceeding on leave of every description at their own expense.

Owing to the fact of certain regiments being recruited from areas at a considerable distance from the places at which they are stationed and to the fact that the period of furlough of men in such cases is seven months, it was subsequently agreed that the tickets issued in connection with concessions Nos. (i) and (iv) should be made available for twelve months.

82. Railway Warrants—In September and December 1906 the Government of India in the Marine Department empowered the Principal Port Officer, Burma, the Marine Transport Officer, Mandalay, and the officer in charge Marine Survey of India to issue railway warrants.

83. Through rail and steamer service for the booking of goods between stations on the Assam-Bengal railway and Calcutta, *via* Chittagong.—In March 1908 approval was given to the Assam-Bengal Railway Company arranging with a steamer company for the introduction of a combined rail and steamer service for the booking of goods traffic between stations on that railway and Calcutta, *via* Chittagong, on the condition that the mileage rates charged for goods booked over any portion of the Assam-Bengal railway system *via* Chittagong, should not be lower than those charged for goods booked over the railway *via* Chandpur, and that the mileage rates charged over the Assam-Bengal railway on goods booked *via* Chandpur should not be greater than the mileage rates charged on the Eastern Bengal State railway between Goalundo and Calcutta and *vice versa*.

84. Terms for the construction of sidings to kerosine oil installations within railway limits.—The form of agreement approved in July 1905 for the extension of State-worked railways into private premises for traffic from mills or other industries, made it a condition that a sum of Rs. 200 per mile, or part of a mile, must be paid by the applicants for a siding to cover the survey charges entailed. It having been represented that this charge was inequitable in the case of the short sidings that are laid to kerosine oil installations within railway limits, orders were issued in February 1907 that it may be remitted in the case of these sidings.

85. Representation on the Port Trust Board, Bombay, of the Great Indian Peninsula and Bombay, Baroda and Central India railways.—In view of the change in the control of the railways terminating in Bombay, [viz., the Great Indian Peninsula and the Bombay, Baroda and Central India railways,] owing to the abolition of the appointment of Consulting Engineer for Railways, Bombay, and in view of the community of interests of the two railways and of the Port Trust, the Government of Bombay have amended the Bombay Port Trust Act to allow of the enlargement of the Board, so that the two railways may have direct representation on it.

86. Dispute between the Port Trust and the Great Indian Peninsula railway and Bombay, Baroda and Central India railway regarding terminal arrangements for working goods traffic at Bombay.—The Port Trust having introduced a large reclamation and warehouse building scheme, the two railways terminating in Bombay feared that their interests in the goods traffic at the Port were likely to be jeopardised. The Great Indian Peninsula railway was especially anxious about the possible diversion of goods traffic from its Wadi Bandar station, and claimed that the Port Trust should not be allowed to undertake any railway business at Bombay.

As the outcome of discussions at Bombay, which took place from 1st to 12th February 1909, between His Excellency the Governor of Bombay, the Honourable Member for Commerce and Industry, the President of the Railway Board, the Managing Director of the Great Indian Peninsula railway and the Chairman of the Port Trust, proposals were formulated reconciling the various issues and arranging for arbitration in case of any further minor difficulties arising. These arrangements have received the confirmation of the Home Boards of the Great Indian Peninsula and Bombay, Baroda and Central India railways.

87. Purchase of the Kalka-Simla railway.—In paragraph 54, Part I, of the Summary of Lord Curzon's administration, reference was made to this railway, which is 59·44 miles long and on the 2' 6" gauge, as having cost a great deal more than the promoters anticipated, and to the inability of the Company to raise all the capital necessary to complete the line which Government had been obliged to advance. It was there also mentioned that the cost of working had been high and the competition with cart traffic so great, that the earnings were not sufficient to do much more than cover the interest charges on the Government advance, and that Government had, therefore, offered to purchase the line for £300,000. The purchase was arranged for this sum with effect from 1st January 1906. The line was worked as a separate undertaking under the direct orders of the Railway Board up to the end of 1906, and from the 1st January 1907 became part of the North Western State railway system.

88. Purchase of the Noakhali railway.—In Part I, paragraph 54, of the Summary of Lord Curzon's administration reference was made to negotiations then in progress for the purchase of the Noakhali (Bengal) branch railway, which is 34·90 miles long and on the metre gauge. The purchase was concluded in 1906 for the sum of £115,000, and, with effect from 1st January 1906, the Assam-Bengal Railway Company are working the line as an integral part of their system in accordance with the provisions of their contract with the Secretary of State for India, dated the 11th April 1906.

89. Proposed purchase of the Hardwar-Dehra railway.—In paragraph 55, Part I of the Summary of Lord Curzon's administration, reference was made to a proposal by Government to purchase this railway. As stated therein the Company pressed for a modification of the terms of their contract, but their application was rejected, as the Government of India did not consider that they had made out a sufficiently strong case. Negotiations were then opened by the Company with a view to the line being purchased by Government outright, at the par value of the shares, *plus* the guaranteed interest to date of purchase and accrued excess profits. The Government of India would not accept these terms, but offered to lay the matter before the Secretary of State if the Company were prepared to sell their line for a sum equal to 25 times its average net receipts during the preceding three years. These terms were declined by the Company, and the question of the purchase of the line by Government fell through.

90. Darjeeling-Himalayan railway.—Under clause 22 of the contract, dated the 19th April 1879, between the Secretary of State for India and the Darjeeling-Himalayan Railway Company, power was reserved to Government of exercising the right to purchase the line in May 1909, by serving the Company, on or before the 4th May 1908, with twelve months' notice of termination of the contract. It was, however, decided not to serve the notice, and to allow the existing terms and conditions of the contract to continue for a further period of ten years, *viz.*, to May 1919.

91. Closing of the Thatôن-Duyinzaik railway for traffic.—The Irrawaddy Flotilla Company having represented to the Government of Burma that on the opening of the Burma Railways Company's more rapid route to and from Moulmein, *via* Martaban, the traffic carried by their Flotilla would cease, that their launches between Moulmein and Duyinzaik could hope for little or no intermediate traffic, and that, when the through passenger and goods traffic between Thatôن and Moulmein was diverted to the Burma railways, their launch and train service could only be continued at a very heavy loss, the Local Government agreed to the Thatôن-Duyinzaik railway being closed for traffic after 15th November 1907. This was accordingly done.

92. Future working and management of the Morvi railway.—The question having been raised whether circumstances were such as to call for any alteration in the existing management of the Morvi railway—the property of the Thakor Saheb of Morvi—the Government of Bombay proposed in September 1907, and in February 1908 the Government of India concurred in the views of the Local Government, that the line should be worked for some time on the present "coalition" system applicable to all the other Native State lines in Kathiawar, at least until the whole possibilities of the Kathiawar railway

system could be gauged, when Government would be free to accept such other arrangement as the States might then be found to prefer, and which Government might, with fuller knowledge, be able to approve.

It was suggested to the Government of Bombay that in carrying the proposal into effect, the Thakor Saheb should be called upon either to comply with the terms of the agreement accepted by him in 1889, by which he agreed to enter into whatever scheme of management the Government might decide to adopt for the metre gauge lines of Kathiawar on the expiry of the existing agreement for the Bhavnagar-Gondal-Junagad-Porbandar railway, or to show cause why the agreement should not be complied with.

In December 1908 a memorial, dated July 1908, by the Thakor Saheb of Morvi, was received from the Government of Bombay, in which His Highness protested against the inclusion of the Morvi railway in the "coalition" of railways in Kathiawar. In February 1909 the Government of India, after reconsideration of the case, were of opinion that the Thakor Saheb should not be compelled to give up the separate management of his railway until the conditions of working the "coalition" lines had been so re-arranged as to be acceptable to all parties. When a satisfactory scheme had been settled for working the Kathiawar system of railways, the Government of India considered that His Highness might reasonably be moved to fall in with the general scheme. But until that time arrived they were not prepared to enforce the fulfillment by His Highness of the agreement concluded by him in 1889. In these circumstances the Bombay Government were requested to investigate, at the earliest possible date, the present system of working the "coalition" lines and the feasibility of rearrangement of conditions which would be satisfactory to all parties. It was added that Sir T. R. Wynne, President of the Railway Board, was prepared to visit Kathiawar in April 1909 in order to assist in the enquiry, and, should this be in accordance with the wishes of the Government of Bombay, details should be arranged in direct communication with him. As the outcome of this suggestion the President was asked by the Bombay Government to undertake the necessary negotiations and investigations, with the object of bringing about a working "coalition" satisfactory to all parties. He accordingly proceeded to Kathiawar at the end of June 1909 and discussed the situation generally with the members forming the Railway Board of Control and, individually, with the Chief and Dewan of each State, except Junagad where the interview was with the Dewan only, and as a result of his visit the President submitted a report, dated the 10th July 1909, to His Excellency the Governor of Bombay.

After dealing with the different schemes that had been suggested, the report stated that only two deserved consideration, *viz* :—

- (i) a combination of the whole of the railways in Kathiawar, including Morvi, on the basis of a joint purse;
- (ii) separate working of each railway by each State.

Scheme (ii) was recommended as the only one which would remove present difficulties, meet the wishes of the Chiefs and work smoothly in the future. It would not necessitate Government forcing on the Chiefs a scheme of working of which the majority disapproved and which it would be difficult to arrange. Further it had the advantage that, while meeting the views of the Chiefs, it

enabled Government, in return for the liberty given to each State to work its line itself, to fix conditions of working which will prevent future trouble arising and provide for its settlement if it does arise. It would also bring the Thakor Saheb of Morvi under control from which he is at present entirely free. The report also formulated the conditions under which each State should be allowed to work its own line.

The Railway Proprietors having unanimously accepted Sir T. R. Wynne's proposals for the separate management of their respective lines and agreed, subject to certain modifications, to the conditions laid down by him for such working, the proposals were considered by the Government of India in the Foreign Department, and, in June 1910, it was decided that the best means of overcoming the difficulties experienced in working the present system, was to sanction a system of separate working of each railway by its owner or owners. Sanction to the proposal was given on the understanding that, as a condition precedent to the introduction of the new scheme, the claims set up by the members of the present "coalition" against each other should be waived. The Government of Bombay were furnished with a statement showing (a) the original conditions for working proposed by Sir T. R. Wynne; (b) the modifications suggested by the Proprietors of the railways; (c) the views of the Government of Bombay thereon, and (d) further notes by Sir T. R. Wynne in which he suggested the final form the conditions should take. It was stipulated that proposals for the construction of a new line, or extensions to existing lines, must be considered from a political point of view before they come under the consideration of the Railway Board, since there were no grounds for a departure from existing practice in this respect, and, therefore, all that seemed necessary was to substitute the Government of India for the Railway Board as the sanctioning authority in the draft conditions. Similarly, the exercise of the powers which, under two of the conditions, it was proposed to confer on the Railway Board, were required clearly to be made conditional on the previous sanction of the Government of Bombay, and a proviso to this effect inserted in the draft conditions. With these modifications the Government of India were of opinion that the recommendations of Sir T. R. Wynne might be accepted. Finally the Government of Bombay were desired to fix a date, without delay, for the introduction of the separate working of the several railways, and the 1st January 1911 was suggested as a suitable date for the purpose. The Local Government was further informed that the Railway Board would be prepared specially to depute an officer to assist the different States in organising their arrangements for separate working, and to help them for a time after they have undertaken the working of their respective railways.

93. Working of the Nagda-Muttra railway by the Bombay, Baroda and Central India railway as a provisional measure.—On the 15th February 1908 sanction was accorded, as a purely provisional measure, for the working by the Bombay, Baroda and Central India Railway Company of sections of the Nagda-Muttra railway as opened for traffic, and, pending settlement of a permanent agreement, it was agreed in September 1909 that the entire line, when opened, should be worked on terms similar to those agreed upon in February 1908, with certain modifications of those terms. The line was opened throughout on 1st October 1909, and the terms of the permanent agreement are now under consideration by the Secretary of State.

94. Rearrangement of the railways in Southern India on the termination of the Madras Railway Company's contract on the 31st December 1907.—The contracts of the Southern Mahratta and Madras railways having approached the period at which it was open to the Secretary of State to exercise the option of terminating them, it was decided to take advantage of the opportunity and to rearrange the railway systems of Southern India. Proposals were, therefore, submitted to the Secretary of State under which the Madras railway system would be absorbed by the Southern Mahratta and the South Indian railways. As an outcome of the resulting negotiations the following arrangement was finally decided on and accepted by the Southern Mahratta and South Indian railways:—

The former railway—

- (i) absorbed the whole of the Madras railway system, with the exception of the Jalarpet-Mangalore section and branches thereof;
- (ii) took over from the South Indian railway—
 - (a) the Katpadi-Dharmavaram section ;
 - (b) the Pakala-Gudur section.

The South Indian railway acquired the Jalarpet-Mangalore section of the Madras railway and branches thereof, with running powers from Jalarpet to Madras and Bangalore and certain rights regarding the quotation of rates.

These arrangements were given effect to on the 1st January 1908, the enlarged Southern Mahratta railway changing its designation to the "Madras and Southern Mahratta railway."

The object aimed at in this scheme of redistribution was to provide the two systems with spheres of operation within which they would be free to develop trade and to build extensions without the risk of creating conflicting interests, and to reduce to a minimum competition of an undesirable nature, while at the same time ensuring equal treatment to the seaports of Vizagapatam, Cocanada, Masulipatam, Madras and Mormugao and the northern ports. It is also expected that the rearrangement will be productive of good to the trade of the Presidency as a whole, and will at the same time conduce to the economical and efficient working of the railways in Southern India.

95. Through metre gauge connection between Northern and Southern India.—A meeting of the Railway Board was held at Hyderabad in July 1905 to hear the views of the various parties interested in the question. After careful consideration the Railway Board recommended the construction of the following lines:—

- (a) from Khandwa, via Akola and Hingoli, to the vicinity of Nanded;
- (b) from Hyderabad to Guntakal, via Kurnool and Kurnool Road.

The Railway Board's recommendation was accepted by the Government of India, and it was agreed that the Nizam's Guaranteed State Railways Company should construct those portions of the metre gauge link which would lie within the territories of Hyderabad proper.

The Kurnool Road-Kurnool section of link (b) has since been constructed by the Southern Mahratta railway with funds supplied by Government.

It has also been decided that the junction of link (*a*) with the Hyderabad-Godavari Valley railway should be at Purna, instead of at Nanded, and the construction by the Nizam's Government of the section from Purna to Hingoli situate in Hyderabad territory has been sanctioned.

96. Metre gauge extension into Karachi.—This question arose in connection with an application from a private firm to form a company for the construction of certain light railways on the 3' 3 $\frac{3}{8}$ " gauge in Lower Sind, *inter alia*, a line from Hyderabad (or Kotri) to Karachi. The Railway Board held that, although the scheme was one which would very likely be carried out eventually, there was no immediate necessity for it, as the present double track 5' 6" gauge line from Kotri to Karachi was able to deal with all the traffic interchanged with the metre gauge line at Hyderabad. They also advised Government that, when the necessity for the extension of the metre gauge to Karachi should arise, the extension should be constructed by the State for the following reasons :—

- (i) that the extension would, at that time, probably be a very profitable one;
- (ii) that it would be reasonable for Government to retain the revenue that would be diverted from the North Western State railway if the metre gauge had direct access to the port; and
- (iii) that it would be advisable for Government to retain a controlling power in respect to rates that might be quoted in competition with other existing routes to ports.

The views of the Railway Board were reported to the Secretary of State in 1907 and accepted by him.

Since then the question has, from time to time, been reopened by the Promoters; but as no new arguments in support of the scheme have been adduced by them their proposals have been rejected.

97. Bombay Harbour branch railway.—This branch line, on the 5' 6" gauge and 7 45 miles in length, is part of a large project to connect the Great Indian Peninsula and Bombay, Baroda and Central India railways with the Docks in Bombay and to provide other terminal facilities, the whole project being one that had been recommended by a Commission appointed in 1899 and accepted by the Secretary of State in 1900. The commencement of work on the project was sanctioned by the Secretary of State in 1905. The estimated cost as at present known amounts to Rs. 62,20,930. The line is expected to be ready for opening shortly.

98. Bridging of the Lower Ganges.—In January 1907, at the suggestion of the Secretary of State, a Committee of six members was appointed to consider and report on the following schemes :—

- (i) the erection of a bridge at Sara, which would link up the metre and broad gauge sections of the Eastern Bengal State railway;
- (ii) the provision of a bridge at Godagari, which would more directly serve the interests of the Bengal and North-Western railway;
- (iii) the scheme suggested by the Railway Board for the construction of a bridge at Rampur-Boalia, connected by short links with the

nearest stations on the Ranaghat-Katihar and Eastern Bengal State railways, and affording direct access to Calcutta by means of a new metre gauge line to be laid *via* Meherpur and Ranaghat; and, at the same time, to express their views on the general question of bridging the Lower Ganges.

The Committee submitted their report in April 1907, and their main recommendations were—

- (a) that the metre gauge should not be extended south of the Ganges;
- (b) that the bridge should be built at Raita, about five miles from Sara, and should be designed for a double broad gauge track;
- (c) that the connecting links necessary for the Raita scheme should be made; and
- (d) that the general arrangements suggested for transhipping should be accepted.

The Government of India agreed to these recommendations, and, in forwarding the Committee's report to the Secretary of State, asked that they might be accepted as the final *dictum* in settlement of the question of bridging the Lower Ganges. At the instance of the Secretary of State the question of the site for the Lower Ganges bridge was again considered in August 1908 by a Committee of five expert engineers, who unanimously recommended a site in the vicinity of Sara as the most suitable one for building and maintaining the proposed bridge. The Committee's report was duly submitted to the Secretary of State, who, on the 4th October 1908, finally decided in favour of Sara as the site for the construction of the project. The necessary notification has since been made and preliminary operations have been commenced under the direction of Mr. R. R. Gales, F. C. H., as Engineer-in-Chief. The site of the bridge has been fixed 3 miles below Sara. Land has been leased or acquired for quarries and brickfields, and the collection of pitching stone and brickburning operations have been started. Waste and arable land has been acquired on both sides of the Ganges at the bridge-site, and homestead land is under acquisition. The type of bridge and method of construction have been decided, and plant is under order in England. It has been decided to construct the bridge for a double broad gauge line.

99. Bombay-Sind connection.—In January 1908 the Secretary of State confirmed the decision arrived at by the Government of India regarding the route to be adopted for the proposed railway connection between the Bombay Presidency and the Province of Sind, *viz.*, a route, north of the Runn of Cutch, from Viramgam on the Bombay, Baroda and Central India railway, *via* Radhanpur, Suigam and Nagar Parkar, to Badin on the North Western State railway. A detailed survey of this route was carried out in 1907-09, and the Secretary of State was addressed in March 1909 as to the necessity, from the military point of view, for constructing this connection, and asked that it might be included in the Railway Programme as soon as possible. In reply His Lordship expressed the view that the existing political situation had removed the necessity for the line for military purposes, and that, as its construction could not be justified on commercial grounds, it should not be provided for in the Railway Programme at present.

100. Itarsi-Nagpur railway.—Sanction to the construction, as an integral part of the Great Indian Peninsula railway, of the Itarsi-Nagpur railway connection, with a branch to the Pench Valley coal fields at Purassia, was notified in June 1908. A final location survey of the line, which is 236·90 miles long, has since been made by the Great Indian Peninsula railway, and construction work has been commenced from the Itarsi end towards Amla and on to Purassia. This line forms a link in the through connection of the northern and southern systems of railways on the standard gauge.

101. Kalimati-Gorumahisani railway.—This branch line, on the 5' 6" gauge and 44·00 miles in length, is intended to provide facilities for the carriage of ore to the Iron Works of the Tata Steel and Iron Company at Kalimati. Construction work, which was sanctioned in 1908, is being pushed on by the Bengal-Nagpur Railway Company, and the line is expected to be ready for opening by January 1911.

102. Military railways : North Western State railway ; Loi-Shilman branch.—This railway was proposed on strategic grounds in 1904. The Secretary of State, in approving of a survey of the line, remarked that the construction of the railway would have to be considered, not exclusively from the strategical point of view, but also in the light of our political relations with the Kabul Government. In June 1905 the Government of India telegraphed to the Secretary of State that it was proposed to construct the line, *via* Warsak and the Loi-Shilman nullah, to the top of the Shilman Ghakke Pass with as much rapidity as possible, leaving the alignment onwards for future decision in the light of our relations with the Amir. In reply the Secretary of State sanctioned the immediate commencement of work on the first section of the line commencing from Kacha Garhi to mile 300, a length of 22·9 miles, and desired that the question of the alignment from that point onwards should be further considered.

The commencement of work on the project was accordingly sanctioned in November 1905 and the necessary provision of funds was made in the annual Railway Programmes; but in December 1908 the Secretary of State intimated that he was not prepared to sanction any more expenditure on this project until he had received the further views of the Government of India on the large increase in the estimated cost of the line, as also on the existing political conditions. Work on the line has therefore been suspended until further orders.

IMPORTANT RAILWAY WORKS COMPLETED.

BALUCHISTAN AGENCY.

103. North Western State railway ; Quetta-Nushki section.—This section of the North Western State railway leaves the main line at Spezand, between Sibi and Quetta, descending from there, in a south-westerly direction, to the important strategical position of Nushki, the total fall being about 2,500 feet. There are two tunnels on the line, namely, the Nishpa and the Sheikh Wasil, of lengths of about 2,693 and 365 feet, respectively. Commencement of work was sanctioned in August 1902, and the line, 83·29 miles in length on the standard gauge, was opened for passenger traffic on the 15th November 1905.

BENGAL.

104. Bengal-Nagpur railway ; Midnapore-Jharia extension.—The section Bhojudih to Gomoh in the Jharia coal district, 25·41 miles long, with a branch from Mohuda to Malkera, 3·40 miles in length on the 5' 6" gauge, was opened to traffic on the 1st January 1907. The line crosses the Damodar river by a bridge consisting of 3 spans of 150 feet, 2 spans of 100 feet, 12 spans of 40 feet and 14 spans of 20 feet.

105. Eastern Bengal State railway ; Murshidabad branch.—The Murshidabad branch of the Eastern Bengal State railway runs from Ranaghat, *via* Bhagwangola, to Lalgola, a distance of 94·33 miles on the standard gauge, and crosses two navigable rivers, the Churni and the Jellinghee. The section Ranaghat to Bhagwangola, 88·43 miles long, was opened for traffic on the 20th September 1905 and that from Bhagwangola to Lalgola, a length of 5·90 miles, on the 1st January 1906.

106. East Indian railway ; Gya-Barakar Chord.—The section of the Grand Chord line, Manpur to Paharpur, 17·42 miles in length, was opened to traffic on the 15th August 1906, and the section Paharpur to Dhanbaid, 103·71 miles long, on the 1st January 1907. With the opening of this latter section the whole of the Grand Chord railway, 281·40 miles long, the shorter route between Calcutta and Bombay and Upper India was introduced on the East Indian railway, the difference in length between the new and old routes being 51 miles.

On the section Paharpur to Dhanbaid there are 3 tunnels, all of which have been taken out to the full section for double line. There are also 5 important bridges, *viz.*, the Katri, 6 spans of 30 feet arches; Kherua, 6 spans of 60 feet girders; Barsoti, 5 spans of 60 feet girders; Barakar, 8 spans of 60 feet girders, and Akto, 5 spans of 60 feet girders.

Besides the above there are three bridges on the hill section between Gujhandi and Gurpa, each consisting of three arched masonry spans of 57 feet.

BOMBAY.

107. Matheran Light railway.—The construction of this hill railway, 12·61 miles long on the 2' 0" gauge, under a concession granted by the Government of Bombay to Sir Adamjee Peerbhoy, was sanctioned in July 1904. The line, which connects Neral station on the Great Indian Peninsula railway with the hill station of Matheran, was opened to public traffic on the 22nd March 1907. It is worked by the Great Indian Peninsula Railway Administration.

BURMA.

108. Burma railways ; Pegu-Moulmein extension.—The construction of this extension, a distance of 121·27 miles, was sanctioned by the Secretary of State in November 1903. The line was completed and opened to public traffic on the 25th September 1907.

There are several important bridges on this railway—one over the Sittang river consisting of 11 spans of 150 feet girders.

This line affords through communication by railway between the seaports of Rangoon and Moulmein.

EASTERN BENGAL AND ASSAM.

109. Eastern Bengal State railway ; Katihar-Godagari extension.—The project for this line, which is an extension of the metre gauge portion of the Eastern Bengal State railway, was sanctioned by the Secretary of State in April 1905. The line was completed and opened for passenger traffic on the 1st January 1909.

This extension, with a ferry at Godagari, in conjunction with the line recently built from Ranaghat to Lalgola on the south bank of the Ganges, affords a direct route to Calcutta for traffic from the metre gauge system lying north of the Ganges and west of Katihar Junction.

110. Eastern Bengal State railway ; Gauhati extension.—This extension, 147·75 miles in length, connects the Eastern Bengal State railway metre gauge system with the Assam-Bengal railway system by means of a ferry over the Brahmaputra river at Gauhati. The project was sanctioned for construction in December 1902, and the extension was opened to public traffic by sections as follows :—

Golakganj to Kokrajhar	...	... 35·75 miles, on 1st February 1906 ;
Kokrajhar to Sorbhog	...	... 39·73 miles, on 1st November 1909 ;
Sorbhog to Gauhati	...	... 72·27 miles, on 1st January 1910.

MADRAS AND SOUTHERN INDIA.

111. Nilgiri railway ; Coonoor-Ootacamund extension.—The construction of this extension, which was sanctioned by the Secretary of State in 1903, was carried out by the State. The line was opened for traffic on the 15th October 1908. This long desired extension has given the Nilgiri railway its proper objective, Ootacamund, which is the summer head-quarters of the Government of Madras. Under the redistribution of railways in Southern India, which was effected on the lapse of the late Madras Railway Company's contract, the working of the Nilgiri railway has been made over to the South Indian railway Administration.

112. South Indian railway ; Azhikal-Mangalore extension.—The construction of the Azhikal-Mangalore extension on the 5' 6" gauge was sanctioned in 1902.

The extension was opened to traffic by sections as follows :—

Azhikal to Hosdrug	...	... 34·75 miles, on 21st August 1906 ;
Hosdrug to Kasaragod	...	... 14·22 miles, on 1st October 1906 ;
Kasaragod to Kumbla	...	... 7·61 miles, on 17th November 1906 ;
Kumbla to Mangalore	...	... 20·69 miles, on 3rd July 1907.

The important bridges on the line are the Balipatam, 12 spans of 100 feet Pratt truss girders with deck ; the Palayangadi, 7 spans of 60 feet plate girders ; the Charvattur, 14 spans of 40 feet ; and the Payasavali, 12 spans of 100 feet Pratt truss girders with deck.

113. South Indian railway extension to Manaar : Indo-Ceylon railway connection.—During the years 1906-08 the South Indian Railway Company extended their Pamban branch from Pamban, on Rameswaram Island, to Dhanushkodi, the southernmost point of the island, a length of 18·25 miles. To establish through connection with Ceylon, therefore, the following links are required :—

- (a) the extension of the Ceylon railways to Manaar;
- (b) the establishment of a ferry between Dhanushkodi and Manaar;
- (c) a railway connection between Mandapam, the terminus of the South Indian railway on the mainland of India, and Pamban, the nearest point on the island of Rameswaram.

As regards (a) the Ceylon Government have completed the survey of a line to Manaar, and it is understood that construction will be pushed on as quickly as possible; as regards (b) the South Indian Railway Company are considering the question of establishing a steam ferry service; as regards (c) the proposals of the Board of Directors of the South Indian Railway Company for the construction of an open viaduct across the Pamban Channel, with a swing bridge for the use of shipping still using the Pamban Pass, have recently been approved by the Secretary of State. It has also been decided that the viaduct and swing bridge shall be built for the metre gauge, and preliminary work on the scheme has been commenced.

PUNJAB, SIND AND THE NORTH-WEST FRONTIER.

114. North Western State railway ; Jech Doab branch, Southern section.—The Southern section of the Jech Doab branch, North Western State railway, on the 5' 6" gauge, from Sargodha to Shorkot Road on the Lyallpur-Khanewal railway, a distance of 103½ miles, was sanctioned for construction in September 1903 and opened for traffic on the 11th June 1906. The object of the line is to serve the lower portion of the Jech Doab between the Jhelum and Chenab rivers, which is being colonised in connection with the Jhelum Canal irrigation scheme, and also to open up the country on the east of the Chenab, which is being brought under cultivation with the extensions of the canals in the irrigation scheme from that river. The only important bridge on the line is that over the Chenab river, 11 spans of 200 feet girders.

115. North Western State railway ; doubling of the Samasata-Rohri section.—The doubling of the section of the North Western State railway, Samasata to Rohri, a length of 208·50 miles, was sanctioned on the 3rd January 1905 and was opened to traffic in sections as follows :—

Samasata to Khanpur	...	...	76½ miles, on 2nd April 1907;
Khanpur to Reti	...	...	62½ miles, on 3rd April 1907;
Reti to Rohri	...	...	70 miles, on 1st June 1907.

116. North Western State railway ; conversion of the Khushalgarh-Kohat section.—The Khushalgarh-Kohat-Thal line was originally constructed as a light military railway on the 2' 6" gauge, with an aerial cableway across the Indus. In 1903, on the recommendation of the Government of India, the Secretary of State sanctioned the conversion of the Khushalgarh-Kohat section (33·23 miles) to the 5' 6" gauge with a permanent bridge over the Indus at Khushalgarh. The converted section and the new bridge were opened to public traffic on the 5th January 1908.

The bridge, which was designed by Messrs. Rendel and Robertson, Consulting Engineers to the India Office, consists of two spans—on the east side a span of 303 feet, called the "anchor" span, and on the west a cantilever span of 471

feet : each of the cantilevers of the latter span is 104' 8" in length and connected by a "slung" girder of 261' 8" span. The bridge carries a single track of 5' 6" gauge on the top, and a roadway below on the bottom boom.

117. Southern Punjab railway ; Ludhiana extension.—The Ludhiana extension of the Southern Punjab railway connects Ferozepore Cantonment with Ludhiana to the east and Ferozepore City with MacLeod Ganj to the south-west—the link between Ferozepore City and Ferozepore Cantonment stations consisting of some two miles of existing North Western State railway line. The extension is on the 5' 6" gauge and 153½ miles in length. It was sanctioned for construction in November 1903 and opened for traffic in sections as follows :—

Ferozepore to Ludhiana ...	... 75·90 miles, on 1st October 1905 ;
Ferozepore to MacLeod Ganj	... 77·45 miles, on 10th February 1906.

118. Sutlej Valley railway.—In September 1908 the Secretary of State sanctioned the construction, by the Southern Punjab Railway Company, of a line of railway on the 5' 6" gauge from Kasur to Lodhran, a distance of 209·46 miles, as an integral part of the Southern Punjab railway. The object of this line is to serve that portion of the extensive and fertile Doab formed by the rivers Ravi and Sutlej. The line was opened throughout for traffic in July 1910.

RAJPUTANA AND CENTRAL INDIA.

119. Jodhpur-Bikaner railway ; Degana-Hissar extension.—This extension, on the 3' 3½" gauge and 197 miles in length, the construction of which was sanctioned in June 1908, has been undertaken jointly by the Jodhpur and Bikaner Durbars. For the most part it passes through a tract of desert country, and, while protecting the area from famine, will serve many important towns, on or near its route, inhabited by the wealthy Marwari trading community.

The following sections were opened to public traffic as completed :—

Degana-Sujangarh	...	... 62·50 miles, on 16th September 1909 ;
Sujangarh-Ratangarh	...	... 28·16 miles, on 2nd February 1910 ;
Ratangarh-Churu	...	... 26·00 miles, on 22nd May 1910.

Work on the remaining section is in progress.

120. Nagda-Mutra railway.—This line, on the 5' 6" gauge and 339·35 miles in length, was sanctioned by the Secretary of State in 1905 and its construction was carried out by State railway engineers. It was opened to public traffic as each section was completed, as follows :—

Nagda-Morak	...	...	... 101·51 miles, on 15th July 1907 ;
Morak-Kotah City	...	...	... 35·12 miles, on 26th February 1908 ;
Kotah City-Kotah Junction	...	...	... 3·48 miles, on 1st May 1909 ;
Kotah Junction-Sawai Madhopur		...	... 67·38 miles, on 1st July 1909 ;
Sawai Madhopur-Hindaun City		...	... 65·84 miles, on 1st October 1909 ;
Hindaun City-Mutra	...	...	... 66·02 miles, on 8th July 1909.

There are several important bridges on the line, those over the Chambal river, 14 spans of 100 feet and 2 spans of 60 feet, and the Banas river, 3 spans of 150 feet, 1 span of 60 feet and 5 spans of 40 feet being the most worthy of notice.

This railway connection, which provides the shortest through route on the standard gauge between the port of Bombay and the United Provinces of Agra and Oudh and the Punjab, serves a rich grain-producing country and traverses twelve Native States in Central India and Rajputana, the trade of which is expected to largely develop. Its protective value is also great as a feeder and distributary in the event of the recurrence of the severe famines from which this part of the country has suffered in the past.

The Kotah-Baran branch of this railway, 40 miles long—which was constructed at the same time to form a connection between the Nagda-Muttra railway and the Bina-Goona-Baran branch of the Great Indian Peninsula railway—was opened to public traffic on the 1st May 1909.

UNITED PROVINCES OF AGRA AND OUDH.

121. Benares-Allahabad railway.—The construction of the Benares-Jhúsi section of this line, (71·50 miles), with a branch from Madhosingh to Mirzapur Ghát, (6 miles), as a part of the Bengal and North-Western railway system, was sanctioned by the Secretary of State in 1907. The Mirzapur branch was opened for traffic on the 21st March 1909, and the main line, from Benares to Jhúsi throughout, on the 21st April 1909. The extension on the metre gauge, from Jhúsi to Allahabad, by means of a separate bridge across the Ganges, is under construction.

122. East Indian railway direct access line to Belanganj station at Agra.—The proposal of the East Indian railway to establish a goods and passenger station at Belanganj, Agra, and to construct a new bridge over the Jumna with a viaduct through the bazaar, received the approval of the Secretary of State in July 1904. The line, which is 1·75 miles long, was opened to public traffic on the 1st January 1908.

The bridge consists of 9 spans of 154 feet, and one land span of 40 feet at each end. It carries a single broad gauge track above and a cart road below. The bottoms of the girders are 11 feet above high flood level, and a clear headway of 13 feet is provided over the Strand Road.

The viaduct extends from the west abutment of the bridge to the east of the station yard. It is made up of 8 arches of 21 feet span, 48 arches of about 20 feet, 5 arches of 19 feet, 1 of 12 feet and 1 of 6 feet spans, and 4 girder overbridges.

123. Oudh and Rohilkhand State railway; Allahabad-Jaunpur section.—The 5' 6" gauge railway from Phaphamau station on the Allahabad-Fyzabad railway, near Allahabad, to Zafarabad on the Oudh and Rohilkhand State railway, was sanctioned for construction in October 1903. The first portion, Phaphamau to Mariahu, 47·83 miles in length, was opened to traffic on the 18th June 1906, and the remainder, a length of 10·78 miles, with a temporary pile bridge over the Sai river, on the 1st January 1907. The permanent bridge over the Sai river, which consists of 8 spans of 84½ feet, 4 spans of 61½ feet and 2 spans of 20 feet, was opened to traffic on the 27th June 1907.

124. Rohilkund and Kumaon railway; Bareilly-Soron extension.—The line from Bareilly to Soron is on the metre gauge and 56½ miles in length, and was opened for traffic on the 29th January 1906. The bridge over the Ganges at Kachhla Ghát consists of 20 spans of 100 feet girders. Four miles from Bareilly Junction the metre gauge line crosses the Ramgunga river over the existing Oudh and Rohilkhand State railway bridge of 33 spans of 60 feet and 1 span of 72 feet. The completion of this branch line connects the metre gauge system of the Rohilkund and Kumaon railway at Bareilly with the metre gauge system of the Rajputana-Malwa railway at Kasganj.

RAILWAY WORKS OF LESS IMPORTANCE.

125. The following is a list of railways not otherwise mentioned in the Summary, but which have been completed during the Viceroyalty of the Earl of Minto :—

Serial No	Province.	Railway.	Length in miles.	Gauge.
	Bengal.	<i>Bukhtiarpore-Behar Light railway.</i>		
1	"	Behar to Silao	9 57	2' 6"
		<i>Baraset-Basirhat Light railway.</i>		
2	"	Basirhat to Chinglighata (Hosanabad)	8·55	2' 6"
3	"	Beliaghata to Pattipooker	16·25	2' 6"
		<i>Bengal and North-Western railway.</i>		
4	"	Bairagnia to Shikarpur (Naikatiaganj)...	58 28	3' 3½"
5	"	Barai Ghat to Bhagalpur ...	4·29	3' 3½"
6	"	Bettiah to Bagaha	49·50	3' 3½"
7	"	Daronda to Maharajgunj	3 90	3' 3½"
8	"	Gorakhpur to Bagaha	60 94	3' 3½"
9	"	Mansi to Bhaptiahi	78 62	3' 3½"
10	"	New up line between Barauni and Bachhwara	10·50	3' 3½"
11	"	Saharsa to Budham Ghāt	18 32	3' 3½"
12	"	Savan to Thawe	17·76	3' 3½"
13	"	Uska Bazar to Tulsipur	54·00	3' 3½"
		<i>Bengal-Nagpur railway.</i>		
14	"	New up lines from Deulti to Roopnaraain Bridge, east end, and from Kolaghat station, west end, to Machada station, east end.	3·62	5' 6"
15	"	Purulia to Ranchi	72·43	2' 6"
		<i>East Indian railway.</i>		
16	"	Barakar to Chandipore Block Hut	1·51	5' 6"
17	"	Khurja to Hapur	39·54	5' 6"
18	"	New up line from Dhanbaid to Shampur Block Hut.	27·31	5' 6"
19	"	New down line from Chandipore Block Hut (mile 144 68) to Mugma (mile 140 90).	3·78	5' 6"
20	"	New up line from Gujhandi to Gurpa ...	14·25	5' 6"
21	"	Ondal to Sainthia	44·69	5' 6"
22	"	Shikohabad to Farukhabad... ...	29·50	5' 6"
		<i>Eastern Bengal State railway.</i>		
23	"	Lalgola to Lalgola Ghat	2·72	5' 6"
24	"	New double line from Kakurgachi to Tiljala Cabin	2·26	5' 6"
25	"	New quadruple line from Dum Dum Junction to Kakurgachi.	3·13	5' 6"

Serial No.	Province.	Railway.	Length in miles.	Gauge.
26	Bengal.	<i>Howrah-Amra Light railway.</i>		
	"	Jagatballabpur to Champadanga extension	...	9.00
27	Bombay.	<i>Barsi Light railway.</i>		
	"	Barsi Road to Pandharpur and Barsi Town to Tadwalle.		56.95
		<i>Bombay, Baroda and Central India railway.</i>		
28	"	Cambay station to Cambay port (Talapur-Cambay railway).		1.39
29	"	Kheralu-Varetha (Gaekwar's)	...	7.73
30	"	Manund Road-Chanasma-Harij and Chanasma-Bechraji (Gaekwar's).		38.11
		<i>Cutch State railway.</i>		
31	"	Tuna to Bhuj	...	36.78
		<i>Great Indian Peninsula railway.</i>		
32	"	New double line from Khandwa to Itarsi	...	110.50
33	"	New double line from Lonavla to Poona	...	38.82
34	"	Quadruple line from Bombay to Currey Road	...	4.92
		<i>Madras and Southern Mahratta railway.</i>		
35	"	Miraj to Sangli (Sangli State)	...	5.77
	Burma.	<i>Burma railways.</i>		
36	"	Henzada to Kyangin	...	65.25
37	"	New double line from Dabein to Payathônzu	...	26.25
38	"	New double line from Hlawga to Wanetchaung	...	12.25
39	"	New double line from Thingangyun to Ledaunggan...		11.50
	Central India.	<i>Gwalior Light railway.</i>		
40	"	Sabalgarh to Sheopur Kalan	...	66.42
	Central Provinces	<i>Bengal-Nagpur railway.</i>		
41	"	Gondia to Nagpur	...	147.57
42	"	Howbagh Jabalpur to Jubbulpore	...	1.09
43	"	Kamptee to Ramtek	...	14.77
44	"	Nainpur to Mandla	...	26.70
45	"	Pench Valley (Chhindwara-Baikuhî)	...	21.58
		<i>Great Indian Peninsula railway.</i>		
46	"	Warora-Chanda-Balharshah	...	37.86
	Eastern Bengal and Assam.	<i>Assam-Bengal railway.</i>		
47	"	Akhaura to Ashuganj	...	19.50
		<i>Eastern Bengal State railway.</i>		
48	"	Forbesganj to Jogbani	...	7.40

Serial No.	Province.	Railway.	Length in miles.	Gauge.
	Madras.	<i>Bengal-Nagpur railway.</i>		
49	"	Vizianagam to Parvatipuram	48.70	5' 6"
		<i>Madras and Southern Mahratta railway.</i>		
50	"	Bezwada to Masulipatam	49.47	3' 3 $\frac{1}{2}$ "
51	"	Dhone (Dronachellam) to Kurnool	31.75	3' 3 $\frac{1}{2}$ "
52	"	Korukkuppettai to Basin Bridge	0.85	5' 6"
53	"	Washeimenpet to Basin Bridge	1.00	5' 6"
		<i>South Indian railway.</i>		
54	"	Arantangi Quarry Siding (Tanjore District Board railway).	3.90	3' 3 $\frac{1}{2}$ "
55	"	Morappur to Dharmapuri (Famine Protective line) ...	18.36	2' 6"
56	"	Tirupattur to Krishnagiri (Famine Protective line)	25.43	2' 6"
	Punjab.	<i>Kalka-Simla State railway.</i>		
57	"	Simla station to Bullock Train Terminus ...	0.45	2' 6"
		<i>North Western State railway.</i>		
58	"	Amritsar to Kasur	54.92	5' 6"
59	"	Chichoki to Jaranwala	48.00	5' 6"
60	"	Lodhran to Khanewal	56.44	5' 6"
61	"	New up line from Amritsar to Lahore ...	81.41	5' 6"
62	"	New double line from Lodhran to Samasata ...	13.77	5' 6"
63	"	New double line from Amritsar to Butari ...	19.80	5' 6"
64	"	New double line from Lahore to Shahdara ...	5.26	5' 6"
65	"	Shahdara to Sangla	55.57	5' 6"
	Rajputana	<i>Dholpur-Bari railway.</i>		
66	"	Dholpur to Bai	19.62	2' 6"
		<i>Jaipur State railway.</i>		
67	"	Sanganer to Siwai Madhopur	73.18	3' 3 $\frac{1}{2}$ "
	United Provinces.	<i>Bengal and North-Western railway.</i>		
68	"	Chupra to Mashrak	26.32	3' 3 $\frac{1}{2}$ "
		<i>East Indian railway.</i>		
69	"	Etmadpur to Mile 829	1.11	5' 6"
70	"	New double line from Moghal Sarai to Mirzapur ...	37.78	5' 6"
71	"	New double line from Allahabad to Subadargunge ..	2.40	5' 6"
72	"	New double line from Karchana to Chheoki ...	5.20	5' 6"
73	"	New Junction Cabin at Moghal Sarai to Bechupur station.	1.19	5' 6"
		<i>Great Indian Peninsula railway.</i>		
74	"	Kosi to Sanket (Agra-Delhi Choid)	6.06	5' 6"

Serial No.	Province.	Railway.	Length in miles.	Gauge.
	United Provinces.	<i>Oudh and Rohilkhand State railway.</i>		
75	"	Balamau to Sitapur	34 12	5' 6"
76	"	Madhoganj to Sandi	17 04	5' 6"
77	"	New double line from Lucknow to Kakori ...	10·50	5' 6"
78	"	Rosa to Sitapur	49·22	5' 6"
		<i>Rajputana-Malwa railway.</i>		
79	"	Muttia Cantonment to Narauli Block Cabin, with branch to Biindaban.	2 82	3' 3 $\frac{1}{2}$ "
		<i>Rohilkund and Kumaon railway.</i>		
80	"	Bareilly to Sonon	56·25	3' 3 $\frac{1}{2}$ "
81	"	Moradabad-Ramnagar and Kashipur-Lalkua ...	81 32	3' 3 $\frac{1}{2}$ "
82	"	Shahamatganj Junction to Shahamatganj station ...	1 75	3' 3 $\frac{1}{2}$ "
		<i>Shahdara (Delhi)-Saharanpur Light railway.</i>		
83	"	Shahdara to Saharanpur	93 00	2' 6"
		<i>Sind Light railways.</i>		
84	"	Mirpur Khas to Jhudo	41·00	3' 3 $\frac{1}{2}$ "

IMPORTANT RAILWAY WORKS IN PROGRESS.

126. The following table shows the railway lines sanctioned or under construction on the 31st July 1910 :—

Serial No.	Railway.						Gauge.	Length in miles.
<i>Arrah-Sasaram.</i>								
1	Arrah-Sasaram (tramway)	... ... ... ... ... ...					2' 6"	60·75
<i>Assam-Bengal.</i>								
2	Kalaura-Sylhet	... ... ... ... ... ...					3' 3½"	30·00
<i>Avadi-Poonamalee.</i>								
3	Avadi-Poonamalee ..	... ... ... ... ... ...					2' 0"	6·50
<i>Barsi Light.</i>								
4	Pandharpur Town extension	... ... ... ... ... ...					2' 6"	1·36
5	Tadwalle-Latur extension	... ... ... ... ... ...					2' 6"	36·99
<i>Bengal and North-Western.</i>								
6	Burhwal-Sitapur (Bengal and North-Western)	... ... ... ... ... ...					3' 3½"	59·80
7	Jhusi-Allahabad extension (Bengal and North-Western)	... ... ... ... ... ...					3' 3½"	6·00
8	Pertabganj-Bhimnagar (Tirhoot State)	... ... ... ... ... ...					3' 3½"	13·44
9	Samastipur-Roserah (Tirhoot State)	... ... ... ... ... ...					3' 3½"	17·20
10	Thawe-Tewaripatti-Captainganj (Bengal and North-Western)	... ... ... ... ... ...					3' 3½"	59·75
<i>Bengal-Nagpur.</i>								
11	Balaghpat-Katangi	... ... ... ... ... ...					2' 6"	29·57
12	Bhojudih-Pathardihi	... ... ... ... ... ...					5' 6"	2·28
13	Kalimati-Gorumahisani	... ... ... ... ... ...					5' 6"	40·00
14	Khirsadah-Sirgora	... ... ... ... ... ...					2' 6"	8·43
15	Kochwahi-Ramrama	... ... ... ... ... ...					2' 6"	5·50
16	Nagbhira-Chanda ..	... ... ... ... ... ...					2' 6"	61·19
17	Nagpur-Chhindwara, with branch to Khapa	... ... ... ... ... ...					2' 6"	97·56
18	Raipur-Parvatipuram	... ... ... ... ... ...					5' 6"	260·67
<i>Bhavnagar-Gondal-Junagadh-Porbandar.</i>								
19	Dhasa-Kundla	... ... ... ... ... ...					3' 3½"	35·19
20	Shapur-Kutiyana	... ... ... ... ... ...					3' 3½"	29·71
21	Sihor-Palitana	... ... ... ... ... ...					3' 3½"	17·76
<i>Bombay, Baroda and Central India.</i>								
22	Idar Road-Brahmakhed	... ... ... ... ... ...					3' 3½"	33·91
23	Kosamba-Zankavav (Gaekwar's)	... ... ... ... ... ...					2' 6"	26·43
24	Miyagam-Sinor (Gaekwar's)	... ... ... ... ... ...					2' 6"	20·00
25	Motipur-Kaletia, with a siding to Songir (Gaekwar's)	... ... ... ... ... ...					2' 6"	15·00
<i>Burma.</i>								
26	Daga loop (work in abeyance) ...	... ... ... ... ... ...					3' 3½"	66·25
27	Madaya-Mandalay (tramway) ...	... ... ... ... ... ...					2' 6"	15·00

Serial No.	Railway.						Gauge.	Length in miles.
<i>Champaner-Shivrajpur.</i>								
28	Champaner-Shivrajpur (tramway)	...	...	...	...	...	2' 6"	20·00
<i>Delhi-Umballa-Kalka.</i>								
29	Thanesar-Kaithal extension	...	...	...	...	..	5' 6"	30·00
<i>Dehri-Akbarpore.</i>								
30	Dehri-Akbarpore	...	...	...	...	...	2' 6"	25·00
<i>Dibrus-Sadiya.</i>								
31	Talap-Saikhoa Ghat	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	8·52
<i>Dwara-Therria.</i>								
32	Dwara-Ishamati (work in abeyance)	...	...	...	...	...	2' 6"	16·50
<i>Eastern Bengal State.</i>								
33	Rangiya-Tangla	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	24·00
<i>East Indian.</i>								
34	Barharwa-Azimganj-Katwa	...	...	...	...	...	5' 6"	102·70
35	Bhagalpur-Bausi	...	...	...	...	...	5' 6"	31·04
36	Hooghly-Katwa	...	...	...	...	...	5' 6"	65·20
37	Mirzapur-Karchana doubling	...	...	...	...	...	5' 6"	43·84
38	Pathardihi-Pradhankhunta	...	...	...	...	...	5' 6"	9·00
<i>Gaekwar's State.</i>								
39	Dabhoi-Jarod	...	...	...	...	...	2' 6"	24·78
40	Kadi-Dewusna	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	5·79
<i>Great Indian Peninsula.</i>								
41	Bombay Harbour branch	...	...	...	...	...	5' 6"	8·13
42	Itarsi-Nagpur, with branch to Purassia	...	...	...	...	...	5' 6"	236·90
<i>Hyderabad-Godavari Valley.</i>								
43	Purna-Hingoli	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	50·26
<i>Jagadhri Light.</i>								
44	Jagadhri Light (tramway)	...	...	...	...	...	2' 0"	3·61
<i>Jodhpur-Bikaner.</i>								
45	Churu-Hissar	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	79·73
<i>Lucknow-Bareilly.</i>								
46	Dudhwa-Nepal Frontier	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	14·00
<i>Madras and Southern Mahratta.</i>								
47	Bangalore-Chickballapur (work not started)	...	...	...	...	...	2' 6"	87·95
48	Kunuevahalli branch	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	9·00
<i>North Western State.</i>								
49	Butari-Ambala doubling	...	...	...	...	...	5' 6"	127·20
50	Jaranwala-Shorkot Road	...	...	...	...	...	5' 6"	86·89
51	Khanpur-Chachran	...	...	...	...	...	5' 6"	23·27
52	Trans-Indus (Kalabagh-Bannu)	...	...	...	...	...	2' 6"	94·21

Serial No.	Railway.						Gauge.	Length in miles.	
<i>Oudh and Rohilkhand State.</i>									
53	Allahabad-Rae Bareli-Cawnpore, with branches from Rae Bareli to Mustafabad and Munshiganj to Dalmau.	...	...	...	...	...	5' 6"	153.31
54	Gujraula-Chandpur	...	...	...	...	...	5' 6"	22.15
55	Moghal Sarai-Benares Cantonment doubling	...	...	...	...	...	5' 6"	9.00
<i>Rohilkund and Kumaon.</i>									
56	Mailani-Dudhwa conversion	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	30.49
57	Pilibhit-Barmdeo	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	38.75
58	Pilibhit-Shahjahanpur	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	56.92
59	Sonarpur-Ramnagar Ghat	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	20.79
<i>Shahdara (Delhi)-Saharanpur.</i>									
60	Baraut-Meerut	...	...	...	...	...	2' 6"	30.00
<i>Sind Light.</i>									
61	Mirpur Khas-Khadro	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	49.50
<i>Southern Shan States.</i>									
62	Thazi-Yawngwe	...	...	...	...	...	3' 3 $\frac{1}{2}$ "	100.00
<i>South Indian.</i>									
63	Dharmapuri-Hosur	...	...	...	...	...	2' 6"	54.87

RAILWAY CONSTRUCTION PROGRAMME.

127. The following statement shows the amounts originally proposed for railway construction, the amounts allotted and the actual expenditure during the Viceroyalty, year by year :—

Year.	Proposed figure.		Allotment figure.	Actual expenditure.
		Rs.	Rs.	Rs.
1905-06	12,00,00,000	12,50,00,000 (a)
1906-07	15,00,00,000	15,00,00,000
1907-08	12,00,00,000 (b)	15,00,00,000
1908-09	15,00,00,000	15,06,76,000
1909-10	18,75,00,000	15,00,00,000
1910-11	16,30,00,000	12,95,73,000
			

(a) This figure is made up of the actual forecast figure sanctioned by the Secretary of State and Rs 50,00,000 being the re-grant of the lapse from the Programme for 1904-05 subsequently sanctioned by the Secretary of State.

(b) Alternative programmes for 1907-08, one amounting to 12 crores and another amounting to 15 crores, were submitted to the Secretary of State, and though at first only the 12-crore programme was sanctioned, the grant was ultimately increased to 15 crores.

CONTRACTS EXECUTED.

128. Ahmedabad-Parantij railway.—A contract, dated 17th September 1907, was entered into between the Secretary of State for India and the Ahmedabad-Parantij Railway Company for the continuance of the working of the line by the Bombay, Baroda and Central India Railway Company on the terms in force on 31st December 1905.

129. Amritsar-Patti railway.—On the 7th May 1909 a contract was entered into between the Secretary of State for India and the Amritsar-Patti Railway Company for the construction and working of the extension of their line from Patti to Kasur.

130. Assam-Bengal railway.—On the 11th April 1906 a contract was entered into between the Secretary of State for India and the Assam-Bengal Railway Company for the incorporation in that Company's undertaking of the Noakhali railway, which was purchased by Government as from 1st January 1906.

131. Barsi Light railway.—On the 4th December 1905 a supplemental indenture was entered into between the Secretary of State for India and the Barsi Light Railway Company, making certain modifications in the Company's contract of 26th August 1902 for the construction, maintenance and working by the Railway Company of the Pandharpur and Tadwalle extensions, and providing for the issue of debenture stock to the amount of £140,000.

A supplementary contract, dated 31st March 1909, was entered into between the Secretary of State for India and the Barsi Light Railway Company,

Limited, in respect of the British section of the extension of the Company's line from Tadwale to Latur.

132. Bengal and North-Western railway.—A contract, dated 7th October 1907, was entered into between the Secretary of State for India and the Bengal and North-Western Railway Company, making provision for further extensions of the Company's railway from Uska Bazar to Tulsipur, with a branch from Gainsari to Jarwa ; from Gorakhpur to Bagaha ; from Daronda to Maharajgunj ; from Savan to Thawe and from Kopaganj to Dohrighat ; all of which have been constructed and opened for traffic : also for a railway from Benares to Allahabad, *via* Jhusi, of which the Jhusi-Allahabad section alone remains to be completed.

An indenture, dated the 1st October 1908, was entered into between the Secretary of State for India and the Bengal and North-Western Railway Company for the construction of the Chupra-Mashrak extension of the Company's main line.

On the 9th July 1909 a contract was entered into between the Secretary of State and the Bengal and North-Western Railway Company for the construction of a line of railway from the Company's station at Burhwal to Sitapur station on the Lucknow-Bareilly State railway.

133. Bengal-Nagpur railway.—On the 22nd February 1910 a contract was entered into between the Secretary of State for India and the Bengal-Nagpur Railway Company for the construction, maintenance and working of the under-mentioned new lines by the Company :—

- (1) a branch line of the 5' 6" gauge from the Company's station at Ramkanali to Chaurashi ;
- (2) an extension line of the 2' 6" gauge from Purulia, on the main line, to Ranchi ;
- (3) a branch line of the 5' 6" gauge from Kamptee to Ramtek ;
- (4) a line of the 2' 6" gauge from Chhindwara to Barkubi in the Pench Valley ;
- (5) an extension line of the 2' 6" gauge from Gondia, on the main line, to Chanda, with a branch from Nagbhira to Nagpur ;
- (6) an extension line of the 5' 6" gauge from Raipur, on the main line, to Vizianagram ;
- (7) a line of the 5' 6" gauge from Kalimati to Gorumahisani ;
- (8) an extension line of the 2' 6" gauge from Nagpur to Chhindwara, with a branch to Khapa.

134. Bombay, Baroda and Central India railway.—The Secretary of State, upon the recommendation of the Government of India, terminated, on 31st December 1905, the Bombay, Baroda and Central India Railway Company's then existing contracts by purchase of the line with effect from 1st January 1906. The working of the whole of the Bombay, Baroda and Central India railway system was entrusted to a reconstituted Company, under a contract, dated 27th December 1905, which embodied the temporary arrangements agreed upon.

In June 1906 agreement was reached regarding the main conditions to form the basis of a new contract to run for a term of 25 years for the working, by the Company, of the Bombay, Baroda and Central India and Rajputana-

Malwa railway systems. An indenture was accordingly entered into on the 8th April 1907, between the Secretary of State for India and the Bombay, Baroda and Central India Railway Company, for the maintenance, management and working of the Bombay, Baroda and Central India railway, the Rajputana-Malwa and other subsidiary railways by the Bombay, Baroda and Central India Railway Company. The terms of the contract on which the undertaking is worked and managed by the Company came into force from the 1st January 1906, and are in substitution of the temporary arrangements in that behalf contained in the contract of the 27th December 1905. The contract is terminable by either party on the 31st day of December 1930, or on the 31st day of December in any succeeding fifth year reckoning from that date, by giving twelve months' notice.

An indenture, dated the 15th October 1908, was entered into between the Secretary of State for India and the Bombay, Baroda and Central India Railway Company regarding the issue of future debentures and debenture stock.

135. Bombay, Baroda and Central India and Ahmedabad-Parantij railways.—A contract, dated 2nd October 1908, was entered into between the Secretary of State for India and the Bombay, Baroda and Central India Railway Company, providing for the working by the latter of the proposed extension of the Ahmedabad-Parantij railway from Idar Road to Brahmakhed and modifying the terms on which the Ahmedabad-Parantij railway is worked at present.

136. Burma railways.—On the 22nd February 1907 an indenture was entered into between the Secretary of State for India and the Burma Railways Company for the construction and working of the Pegu-Moulmein and Henzada-Kyangin railways and the Daga loop line.

On the 9th June 1909 a contract was entered into between the Secretary of State for India and the Burma Railways Company, embodying the conditions on which the Company was authorized to increase its share capital.

137. Delhi-Umballa-Kalka railway.—On the 3rd November 1909 a contract was entered into between the Secretary of State and the Delhi-Umballa-Kalka Railway Company, for the construction of a branch line of railway from Thanesar to Kaithal.

138. East Indian railway.—On the 16th January 1907 an indenture was entered into between the Secretary of State for India and the East Indian Railway Company for working the South Behar railway as part of the undertaking of the East Indian Railway Company, with effect from 1st January 1906 until the termination of the Company's contract of 1879.

On the 1st July 1909 a contract was entered into between the Secretary of State and the East Indian Railway Company for the working by the Company of the Thanesar-Kaithal railway.

139. Great Indian Peninsula railway.—An indenture, dated the 4th August 1908, was entered into between the Secretary of State for India and the Great Indian Peninsula Railway Company regarding the issue of debenture stock during 1908-09, and any other debenture stock to be issued subsequently

with the sanction of the Secretary of State; and on the 5th February 1909 an indenture was entered into between the Secretary of State for India and the Great Indian Peninsula Railway Company for the working by the Company of the Agra-Delhi Chord railway.

A contract, dated the 19th March 1909, having effect from the date of the opening of the line throughout for public traffic, was entered into between the Secretary of State for India and the Great Indian Peninsula Railway Company for the working of the Bárán-Kotah railway. The contract is terminable on 30th June or 31st December of any year, or by either side giving to the other not less than 12 calendar months' notice in writing.

140. His Highness the Nizam's Guaranteed State railways.—An agreement, dated the 6th April 1909, having effect from the 1st January 1901, was entered into between the Secretary of State for India and the Nizam's Guaranteed State Railway Company for the working of the Bezwada Extension railway. The agreement is terminable on the 1st January or the 1st July of any year, on six months' previous notice in writing being given by either party to the agreement to the other.

141. Indian Midland railway.—By the contract dated the 21st December 1900 the Indian Midland Railway Company agreed to hand over its system of railways, (including the Bhopal-Ujjain, Bina-Goona-Baran and Gwalior Native State railways), to be worked by the Great Indian Peninsula Railway Company under the latter's contract with the Secretary of State dated the 21st December 1900—the Indian Midland Railway Company retaining its right, under its contract of 2nd October 1885, to a guarantee of interest at 4 per cent per annum on its capital and to one-fourth of the surplus profits of its system. In 1909 the Indian Midland Railway Company not having accepted the Secretary of State's proposals for the continuance of the Company's contract of 1885 on modified terms after 31st December 1910, the Secretary of State, on 1st December 1909, served the Company with notice of his intention to terminate the said contract on 31st December 1910, and the Indian Midland Railway system continues to be worked by the Great Indian Peninsula Railway Company.

142. Madras and Southern Mahratta railway.—On the 21st June 1906 the Secretary of State for India served the Southern Mahratta Railway Company, in England, with formal notice of his intention to determine, on the 30th June 1907, the contract of 1st June 1882 and all contracts supplemental thereto; but on the 26th June 1907 a contract was entered into between the Secretary of State for India and the Southern Mahratta Railway Company postponing the termination of the existing contracts with that company until the 30th June 1908, and on the 26th June 1908 an indenture was entered into between the Secretary of State for India and the Madras and Southern Mahratta Railway Company for working the existing lines of the old Southern Mahratta railway and parts of the late Madras and South Indian railways.

143. Rohilkund and Kumaon railway.—On the 13th July 1906 an indenture was entered into between the Secretary of State for India and the Rohilkund and Kumaon Railway Company, embodying the arrangements

agreed upon in connection with the acquisition by the Company of interests in the Powayan Steam Tramway Company. It has since been agreed that Messrs. Lyall, Marshall and Company will resign the Agency of the Tramway Company in favour of the Rohilkund and Kumaon Railway Company.

On the 24th March 1909 a contract was entered into between the Secretary of State for India and the Rohilkund and Kumaon Railway Company for the construction and working of the Pilibhit-Barmdeo and Pilibhit-Shahjahanpur railways and extensions of the Dudhwa branch, with a permanent bridge over the Sardah river.

144. South Behar railway.—On the 11th December 1906 an indenture was executed between the Secretary of State for India and the South Behar Railway Company relative to the lease, as from 1st January 1906, of the South Behar railway to Government and its incorporation in the East Indian Railway Company's undertaking.

145. Southern Punjab railway.—On the 4th October 1905 a contract was entered into between the Secretary of State for India and the Southern Punjab Railway Company for the construction by the latter of the MacLeod Ganj-Ludhiana extension, called the "1903 extension".

A contract, dated 14th May 1903, was entered into between the Secretary of State for India and the Southern Punjab Railway Company for the purpose of defining the position of the Ludhiana-Dhuri-Jakhal State railway in relation to the Southern Punjab railway.

On the 24th June 1909 a contract was entered into between the Secretary of State and the Southern Punjab Railway Company for the construction of the Kasur-Lodhran (Sutlej Valley) railway.

146. South Indian railway.—A contract, dated the 2nd March 1909, was entered into between the Secretary of State for India and the South Indian Railway Company, providing for the relinquishment by the Company of the section of its line north of Kátpadi and the transfer to the Company of the Jalarpet-Mangalore section of the Madras railway system. The contract also provides for the working by the Company of the Shoranur-Cochin railway, which is the property of the Cochin State, upon terms to be agreed upon between the Company and His Highness the Raja of Cochin and approved by the Secretary of State. The terms having been agreed upon, an agreement, having effect from 1st January 1908, was concluded in July 1909 and sanctioned in September 1909. The agreement is to remain in force until the termination of the contract, dated the 24th November 1890, between the Secretary of State and the Company, or, if that contract is renewed, the agreement is to continue in force, provided that it shall be lawful for either party to the agreement to terminate the same at any time during its currency by giving to the other 12 months' previous notice, such notice to expire on the 30th June, or before the 31st December, in any year.

On the 26th October 1909 a contract was entered into between the Secretary of State and the South Indian Railway Company for the construction of a famine protective railway from Dharmapuri to Hosur.

147. Tapti Valley railway—On the 26th August 1907 a contract was entered into between the Secretary of State for India and the Tapti Valley Railway Company for the continuance of the working of the line by the Bombay, Baroda and Central India Railway Company on the terms in force on the 31st December 1905.

AGREEMENTS EXECUTED.

148. Assam-Bengal Railway, the Clan Line and the British India Steam Navigation Companies—An agreement, dated the 7th June 1907, having effect from the 1st July 1907, entered into between the Assam-Bengal Railway Company and the Clan Line Steamer Company, Limited, for the through booking of goods from Europe to stations on the railway, was sanctioned in September 1907. The agreement was to remain in force for one year and thereafter until it was terminated by three months' notice by either party. The option to terminate the agreement in 1908 was not exercised.

An agreement dated the 5th October 1909, having effect from 1st November 1909 and in all respects identical with the agreement with the Clan Line, was also sanctioned between the Railway Company and the British India Steam Navigation Company, Limited, and sanctioned in December 1909.

149. Assam-Bengal and Jorhat State railways.—On the 28th October 1908 sanction was accorded to a revised draft agreement between the Jorhat State railway and the Assam-Bengal Railway Company for the working and exchange of traffic at Titabar and Mariani, and the through booking of goods and parcels between the State railway and the railway company.

150. Assam-Bengal railway and Messrs. Turner, Morrison and Company's steamers.—The Government of Eastern Bengal and Assam attaching importance to the development of communication between the mainland and the islands of Sundip and Hatia, it was arranged in 1906 that the District Board of Noakhali should contribute Rs. 500 per mensem, and the Local Government the same amount, towards subsidizing a steamer to be run by Messrs. Turner, Morrison and Company between the islands referred to and Shaheb Ghatta, a station on the Noakhali branch of the Assam-Bengal railway. It was further agreed in May 1907 that the Railway Company should grant for a period of three years a rebate of 10 per cent. on through traffic interchanged with the Steamer Company, subject to a maximum limit of Rs. 500 per mensem and a minimum of Rs. 250 per mensem.

Messrs. Turner, Morrison and Company having subsequently withdrawn from the arrangement, sanction was given in November 1907 to the India General Steam Navigation and Railway and Rivers Steam Navigation Companies working the service, for one year, on the same terms as were originally granted to Messrs. Turner, Morrison and Company, except that the minimum limit of Rs. 250 per mensem fixed in regard to the rebate payable by the railway from interchanged traffic was withdrawn.

151. Bengal-Nagpur and Mourbhanj railways.—The agreement between the Bengal-Nagpur Railway Company and the Maharaja of Mourbhanj for the working, by the former, of the Mourbhanj railway, which was current until the 31st December 1905, has been extended subject to three months' notice by either party.

152. Bengal-Nagpur and Parlakimedi railways.—In June 1906 sanction was accorded by Government to the continuance, during the year 1906,

of the revised agreement, dated 24th January 1905, which was entered into between the Rajah of Parlakimedi and the Bengal-Nagpur Railway Company, for the working of the Parlakimedi Light railway by the Company, and thereafter from year to year until the agreement was determined at any 31st day of December by not less than three calendar months' previous notice.

153. Bengal-Nagpur and Madras railways.—An agreement, dated 24th April 1907 and sanctioned in August 1907, was entered into between the Madras and the Bengal-Nagpur Railway Companies for the interchange of traffic at Waltair, and for the use in common by both railways of the stations and lines at Waltair and Vizagapatam including the wharf. The agreement is terminable at six months' notice from either party.

154. Bengal-Nagpur and East Indian railways.—On the 9th July 1908 sanction was accorded to a revised agreement, which had effect from 1st January 1908, between the Bengal-Nagpur and the East Indian railways for the division of goods traffic between Calcutta and the sections of the East Indian railway, Bally to Asansol and Katni, Katni-Murwara and *via* Katni, *via* Katni-Murwara and *via* Jubbulpore.

155. Bombay, Baroda and Central India and East Indian railways—An agreement, subject to six months' notice of termination, was entered into between the Bombay, Baroda and Central India Railway Company and the East Indian Railway Company for the interchange of coaching and goods traffic at Farukhabad and for the joint use of Farukhabad junction station.

Subsequently, in 1906, the East Indian railway having decided to do their own local goods work and employ their own staff, it was found necessary to somewhat modify the agreement. A revised agreement, subject to six months' notice, was accordingly sanctioned in that year.

156. Bombay, Baroda and Central India and Great Indian Peninsula railways.—Revised clause (b) of the second portion of clause XXVIII of the agreement, dated the 11th April 1896, between the Bombay, Baroda and Central India and Great Indian Peninsula Railway Companies for the interchange of traffic at, and joint working of, Ujjain Junction station was modified, as with effect from 1st January 1907, to provide that all works (including furniture, fittings and other station furniture), costing Rs. 2,000 and below chargeable to revenue, should be added to the appropriate joint station expenses account.

On the 7th June 1907 an addition was sanctioned to clause III of the agreement, dated the 12th October 1903, which had effect from the 4th April 1900, between the Bombay, Baroda and Central India and Great Indian Peninsula Railway Companies, for the joint working of, and the interchange of traffic at, Amalner Junction. The addition, which came into force from the 1st January 1907, provides for works, or minor additions and alterations to existing works (including furniture, fittings and other station furniture), costing Rs. 2,000 and below, being debited to joint station expenses, and for an annual charge being made for maintenance of buildings and permanent-way.

157. Bombay, Baroda and Central India railway and the Cambay Durbar.—On the 23rd March 1909 sanction was accorded to a supplemental agreement, having effect from the 1st July 1908, for the working by the Bombay, Baroda and Central India railway of the Tarapur-Cambay railway

modifying the terms of the principal agreement with respect to expenditure incurred on extraordinary repairs.

158. Bombay, Baroda and Central India railway and the Government of His Highness the Gaekwar of Baroda.—Sanction was accorded in June 1909 to supplemental agreements, having effect, respectively, from the 27th March, 27th March and 1st July 1908, which modified the terms of the principal agreements for the working by the Bombay, Baroda and Central India Railway Company of His Highness the Gaekwar's (i) Petlad, (ii) Mehsana, and (iii) Vijapur-Kalol-Kadi railways in respect to expenditure incurred on extraordinary repairs.

Sanction was accorded in July 1910 to an agreement, dated 17th May 1910, between the Bombay, Baroda and Central India Railway Company and the Government of His Highness the Gaekwar of Baroda for the working and maintenance by the Company of the metre gauge extension of His Highness the Gaekwar's Mehsana railway from Kheralu to Varetha, a distance of 7·73 miles, which was opened for public traffic on 20th August 1909. The agreement is subject to termination by 12 calendar months' notice.

On 16th June 1910 sanction was accorded to an agreement, having effect from 23rd October 1908 to 22nd October 1910 (inclusive), for the working, by the Bombay, Baroda and Central India Railway Company, of His Highness the Gaekwar's Manund Road-Chanasma-Harij and Chanasma-Bechraji railways.

159. Bombay, Baroda and Central India railway and the Jaipur Durbar.—In August 1907 sanction was accorded to an agreement, dated 11th September 1906, entered into between the Bombay, Baroda and Central India Railway Company and the Jaipur Durbar for working the Jaipur railway between Sanganer and Siwai Madhopur. The agreement is terminable at 12 months' notice from either party.

160. Burma Railways and British India Steam Navigation Companies.—An agreement, dated 24th March 1906 and sanctioned in July 1907, was entered into between the Burma Railways Company and the British India Steam Navigation Company for the through booking of goods and parcels between stations on the Burma railways and Calcutta. The agreement remained in force until the 31st March 1907, and was extended to the 31st March 1908, and later to 31st March 1909. In order to avoid the necessity of renewing the agreement every year a revised agreement, dated the 1st April 1909 and terminable at twelve months' notice by either party, was sanctioned in May 1909.

161. Burma Railways and the Irrawaddy Flotilla Companies.—On the 12th August 1908 sanction was accorded, under clause 40 of the contract, dated the 9th March 1897, between the Secretary of State for India and the Burma Railways Company, to the continuance, up to the 31st March 1909, of an agreement, dated the 20th July 1898, between the Burma Railways Company and the Irrawaddy Flotilla Company, for working the Katha-Bhamo traffic.

In order to avoid the necessity of renewing the agreement every year a revised agreement, dated the 1st April 1909 and terminable by notice from either party, was sanctioned in May 1909.

162. Cooch Behar State railway.—An agreement, dated 25th February 1907, as supplemented by the agreement of 4th June 1907 and sanctioned in July 1907, was entered into between the Secretary of State and His Highness the Maharaja of Cooch Behar for the working by the Eastern Bengal State railway of the Cooch Behar State railway. The agreement had effect from 1st January 1907, and is to remain in force until the expiration of six months' notice from either side desiring to revise or cancel it.

163. District Board of Patna and the Bukhtiarpore-Behar Light Railway Company, Limited.—Approval has been accorded to an agreement, dated 2nd June 1908, between the District Board of Patna and the Bukhtiarpore-Behar Light Railway Company, Limited, by which the former extends to the Behar-Silao extension the guarantee given by them in connection with the Bukhtiarpore-Behar Light railway.

164. District Board of Shahabad and the Arrah-Sasaram Light Railway Company, Limited.—Approval has been accorded to an agreement, dated 15th October 1909, between the District Board of Shahabad and Messrs. Martin & Co., on behalf of a company for the construction and working of a light railway (under the Bengal Tramways Act) from Arrah to Sasaram. Under this agreement the District Board guarantee to supplement the net earnings derived by the Company from the tramway by such annual subsidy as may be necessary to allow of the Company paying a dividend of 4 per cent per annum on the whole capital, provided that the total liability incurred by the Board in any one year shall not exceed (a) the sum of Rs. 88,000, or (b) the sum of 4 per cent on the amount of the Company's share capital, whichever is less. The agreement also provides that any surplus profits in excess of 4 per cent shall be divided equally between the Board and the Company.

165. District Board of the Twenty-four Parganas and the Baraset-Basirhat Light Railway Company, Limited.—Approval has been accorded to an agreement, dated 6th November 1907, between the District Board of the Twenty-four Parganas and the Baraset-Basirhat Light Railway Company, Limited, by which the former extend to the Basirhat-Hosanabad extension the guarantee given by them in connection with the Baraset-Basirhat Light railway.

Approval has been accorded to an agreement, dated 21st December 1908, between the District Board of the Twenty-four Parganas and the Baraset-Basirhat Light Railway Company, Limited, by which the former extend to the Beliaghata-Pattipooker extension of the Baraset-Basirhat Light railway the guarantee given by them in connection with the main line.

166. District Board of Kistna and the Madras and Southern Mahratta Railway Company.—An agreement, having effect from the 4th February 1908, entered into between the District Board, Kistna, and the Madras and Southern Mahratta Railway Company for working the Bezwada-Masulipatam Branch railway, running from Bezwada station on the Madras and Southern Mahratta railway to Masulipatam and Bunder, was sanctioned in August 1909.

167. Eastern Bengal State and East Indian railways.—On the 6th July 1908 sanction was accorded to an agreement, which came into force for one year from 1st August 1907, between the Eastern Bengal State railway and the East Indian railway for dealing with the Ganges riverside traffic between

Calcutta and marts north and south of Rajmehal. On the 17th December 1908 sanction was communicated to the continuance of the agreement, as an experimental measure, for a further period of one year from 1st August 1908, subject to certain modification. This sanction was again extended in July 1909 for a further period of one year from 1st August 1909. Later it was found that the receipts from the service did not cover expenses, and the East Indian railway gave notice of their intention to discontinue it; and in November 1909 the Eastern Bengal State railway was authorised to take over the river service between Kansat Ghât and Lalgola and continue it, as a provisional arrangement, up to end of 1909 only. In July 1910 this sanction was extended to 31st December 1910.

An agreement, dated the 20th January 1909, was entered into between the Eastern Bengal State railway and the East Indian railway for the routing of traffic between the Assam-Behar section of the Eastern Bengal State railway and Calcutta and the neighbourhood.

168. Eastern Bengal State railway, India General Steam Navigation and Railway Company, Limited, and the Rivers Steam Navigation Company, Limited.—On the 26th August 1908 sanction was accorded to the revised "combined service agreement" entered into between the Eastern Bengal State railway and the India General Steam Navigation and Railway Company, Limited, and the Rivers Steam Navigation Company, Limited.

169. East Indian and Kalka-Simla railways —An agreement, dated the ^{7th July 1905}_{11th November 1905}, having effect on and from the 20th March 1904 and sanctioned in August 1906, was entered into between the East Indian Railway Company and the Delhi-Umballa-Kalka Railway Company representing the Kalka-Simla railway, for the interchange of coaching (including parcels and dogs but not other live-stock or carriages) and goods traffic of every kind at Kalka station, and for the use by the latter railway of the existing Delhi-Umballa-Kalka railway station at Kalka.

The Kalka-Simla railway having been purchased by Government with effect from 1st January 1906, the Board of Directors, East Indian Railway Company, have since agreed that the same agreement should continue as between the East Indian Railway Company and Government.

170. East Indian and South Behar railways.—In clause 30 of the contract, dated 7th August 1895, between the Secretary of State and the South Behar Railway Company, Limited, it was provided that the net earnings of the Company for each half-year, together with the amount of rebate under clause 29 of the same contract, should be paid over to the Company. With effect from 1st January 1906 the Company relinquished the railway to the Secretary of State to be held by him for his benefit without any interference or control on the part of the Company, and, in lieu of the net receipts as provided by clause 30 of the contract quoted, agreed to receive, until the determination of the contract of 1895, a fixed sum by way of rental at the rate of £30,000 per annum, the East Indian Railway Company continuing to work the South Behar railway as a part of their undertaking.

171. East Indian, Oudh and Rohilkhand State railways and Indian Midland section of the Great Indian Peninsula railway.—

Clauses 23 and 24 of the agreement, which came into force on 1st July 1890, between the East Indian, Oudh and Rohilkhand State and Indian Midland railways for the interchange of traffic at, and for the maintenance and working of, the joint station at Cawnpore, were revised to provide for the payment by the Great Indian Peninsula railway to the East Indian railway of the sum of Rs. 275 per mensem in respect of the crossing of their trains over the East Indian railway at Cawnpore. The arrangement had effect from the 1st January 1907 and is subject to revision on 12 months' notice from either side.

172. East Indian and Oudh and Rohilkhand State railways.—On the 10th May 1907 sanction was accorded to the revision of clause 23 of the agreement, dated the ^{18th December 1897}_{1st March 1898}, between the East Indian and Oudh and Rohilkhand State railways for the interchange of traffic at Moghal Sarai and Aligarh junction stations. The revision relates to the calculation of interest charges on the cost of locomotive stock used for shunting and marshalling of trains, and has effect from the 1st July 1905.

On the 12th February 1909 sanction was accorded to an agreement, which came into force from 1st July 1907, for the construction and maintenance of that portion of the East Indian railway avoiding line, near Moghal Sarai, from Bechupur station, Oudh and Rohilkhand State railway, in the direction of Allahabad, which falls within the Oudh and Rohilkhand State railway boundary, and for the use of Bechupur Junction by East Indian railway passenger trains proceeding between Benares Cantonment, Oudh and Rohilkhand State railway, and Allahabad, East Indian railway, *via* the proposed avoiding line, and for the running of such East Indian railway trains over the Oudh and Rohilkhand State railway between Bechupur and Benares Cantonment.

173. East Indian and North Western State railways.—An agreement, in supersession of that of 1879 and subject to six months' notice of termination and having effect from 1st January 1901, was entered into between the East Indian and North Western State railways and sanctioned in June 1907—

- (i) for the interchange of traffic at Ghaziabad; for the use in common with the East Indian railway and other lines of the East Indian railway existing stations at Ghaziabad and Delhi and stations between Ghaziabad and Delhi; for additions and alterations which might be required thereat from time to time and for their maintenance and renewal; and for the working of traffic;
- (ii) for running powers granted to the North Western State railway between Ghaziabad and Delhi; and
- (iii) for defining the junctions where traffic should be interchanged.

174. East Indian railway and Shahdara (Delhi)-Saharanpur Light railway.—On the 25th March 1909 sanction was accorded to an agreement, having effect from the 7th May 1907, between the East Indian railway and the Shahdara (Delhi)-Saharanpur Light railway for the interchange of coaching (with the exception of horses and carriages) and goods traffic at Shahdara.

175. Great Indian Peninsula and Dholpur-Bari railways.—An agreement, entered into early in 1907, between the Dholpur Durbar and the Great Indian Peninsula Railway Company for the interchange of traffic and for the use in common by both railways of the Great Indian Peninsula railway's

existing station at Dholpur, was sanctioned in August 1907. The agreement came into force from the day on which the Light railway's trains began to run into and use the joint station at Dholpur, and is terminable at six months' notice. The line was opened on the 4th March 1908.

176. Great Indian Peninsula and Holkar State railways.—On the 3rd June 1907 an addition was sanctioned to clause 3 of the agreement, dated the 26th March 1873, between the Great Indian Peninsula and Holkar State railways for joint working at Khandwa Junction. It came into force from the 1st January 1907, and provides for works, or minor additions and alterations to existing works (including furniture, fittings and other station furniture), costing Rs. 2,000 and below, being debited to joint station expenses, and for an annual charge being made for maintenance of buildings and permanent-way.

177. Kalka-Simla State railway and Inspector-General, Railway Mail Service and Sorting, Northern Circle.—An agreement, dated the 25th January 1910 and having effect from 1st February 1910, between the Kalka-Simla State railway and the Inspector-General, Railway Mail Service and Sorting, Northern Circle, was sanctioned in March 1910. The agreement provides that a sum of Rs. 36,000 per annum shall be paid by the Post Office to the railway, in return for which the latter will provide a postal van between Kalka and Simla and Simla and Kalka on each of two Up and Down trains daily to timings specified. The van in each case to be either a four-wheel coach of Kalka-Simla State railway normal size, or half a bogie coach, and having a floor area of not less than 85 square feet.

178. Madras and Southern Mahratta railway and Dhone (Dronachellam)-Kurnool branch railway.—The working of the branch line from Dhone (Dronachellam) to Kurnool, the construction of which was entrusted to the late Southern Mahratta Railway Company, was not provided for in the contract, dated the 26th June 1908, entered into with the Madras and Southern Mahratta Railway Company for working the existing lines and portions of the Madras and South Indian railways, as the link constituted a portion of the Hyderabad-Guntakal railway and it was considered desirable for Government to retain absolute freedom to entrust the working of the entire line, when completed, to an agency other than the Madras and Southern Mahratta Railway Company. On the completion and opening for public traffic on and from 1st January 1909 of the branch line, sanction was, however, given in July 1909 to a separate agreement being entered into with the Madras and Southern Mahratta Railway Company for its provisional working, subject to not less than six months' notice terminating at the end of June or December of any year. The terms agreed upon are that the branch line will be charged with the actual expenditure incurred for maintenance of way and works, other than general superintendence, under Abstract A of the Capital and Revenue Accounts; also with a share of the other working expenses of the system (excluding Government supervision, but including general supervision, under Abstract A) proportionate to the gross earnings, and with a sum equal to 5 per cent of its gross earnings for the use of Madras and Southern Mahratta railway rolling-stock. The necessary agreement for working the branch line has been prepared and is under consideration.

179. Madras and Southern Mahratta and South Indian railways.—Clause 28 of the contract dated the 26th June 1908, between the Secretary

of State for India and the Madras and Southern Mahratta Railway Company for working existing lines and parts of the Madras and South Indian railways, and clause 11 of the contract, dated the 2nd March 1909, between the Secretary of State for India and the South Indian Railway Company, provide that the South Indian railway may exercise running powers for both coaching and goods traffic over the whole or any part of the section of the railway system formerly belonging to the Madras Railway Company from Madras to Bangalore, known as the Madras-Bangalore section. In accordance with this provision sanction was accorded in July 1910 to an agreement, dated the 15th June 1910, between the Madras and Southern Mahratta Railway Company and the South Indian Railway Company for the exercise by the latter of running powers over the whole or any part of the Madras-Bangalore section of the former company.

180. Madras and Southern Mahratta and West of India Portuguese railways.—In February 1908, the Secretary of State and the Government of India expressed their willingness to the existing agreement between the West of India Portuguese Railway Company and the Southern Mahratta Railway Company for the working of that line by the latter Company being extended to 1912, and in the contract dated the 26th June 1908, between the Secretary of State and the Madras and Southern Mahratta Railway Company, provision has been made for this railway to be worked upon the terms of the contract subsisting on the 31st December 1907.

181. North Western State railway and Hall Line Steamer Company.—With effect from the 20th August 1907 arrangements were made with the Hall line of Steamers for the through booking of passengers' luggage, wool, saltpetre and certain other commodities from stations on this railway to Port Said and certain ports in Europe and America.

182. North Western State and Jodhpur-Bikaner railways.—An agreement, dated 19th November 1905, having effect from the 20th October 1901, was entered into between the North Western State railway and the Jodhpur-Bikaner railway for working the Hyderabad (Sind) Junction and Rahoki and Tando Thoro flag stations as joint stations.

183. North Western State and Jammu and Kashmir State railways.—A consolidated agreement, dated 2nd February 1906, was entered into between the Government of India and His Highness the Maharaja of Kashmir and Jammu, in place of the four agreements which previously existed, for the construction and working of the Jammu and Kashmir State railway. The consolidated agreement was for a period of five years from 1st January 1903, but the option of termination at end of 1908 not having been exercised, the agreement is now, under one of its provisions, terminable on six months' notice by either side.

184. North Western State and Bombay, Baroda and Central India railways.—On the 4th November 1908 sanction was accorded to the agreement, which came into force from the 10th February 1906, between the North Western State railway and the Bombay, Baroda and Central India railway, for the interchange of coaching and goods traffic at Fazilka Junction and for the joint use of that station.

185. North Western State, Bombay, Baroda and Central India and Jodhpur-Bikaner railways.—On the 10th May 1909 sanction was accorded to an agreement, having effect from 9th September 1902, between the North Western State railway, the Bombay, Baroda and Central India railway and the Jodhpur-Bikaner railway, for the interchange of coaching and goods traffic at Bhátinda ; for working Bhátinda station, and also for such maintenance, renewal, alterations and additions thereat as may be required from time to time. Sanction was at the same time given to a separate agreement, dated 4th June 1908, entered into between the Bombay, Baroda and Central India railway and the Jodhpur-Bikaner railway, for the joint use of the metre gauge works at Bhátinda Junction.

186. Oudh and Rohilkhand State and Bengal and North-Western railways.—The Bengal and North-Western railway exercises running powers over the Cawnpore-Burhwal 3' 3 $\frac{1}{2}$ " link, which is owned by the State, under an agreement with the Oudh and Rohilkhand State railway, dated the 21st February 1902, which provides that the Company will haul its trains and traffic over the link and pay to the Oudh and Rohilkhand State railway 80 per cent of the gross receipts arising therefrom. On and from 1st July 1905 the Bengal and North-Western Railway Company were allowed to retain 25, instead of 20, per cent of the gross receipts arising from both coaching and goods carried by their trains over the link, on the condition that the Company continued to route the traffic as heretofore.

On the 2nd July 1908 sanction was accorded to the subsidiary agreement, having effect from 3rd January 1906, between the Oudh and Rohilkhand State railway and the Bengal and North-Western railway, for the routing of traffic over the Cawnpore-Burhwal metre gauge link.

187. Oudh and Rohilkhand State and Rohilkund and Kumaon railways.—An agreement, dated 19th September 1906, having effect from the 1st January 1907, was entered into between the Oudh and Rohilkhand State railway and the Rohilkund and Kumaon Railway Company for running powers over the Oudh and Rohilkhand State railway bridge across the Ramgunga river at Moradabad for the metre gauge traffic of the Moradabad-Ramnagar branch of the Rohilkund and Kumaon railway. The agreement is subject to twelve months' notice of termination by either railway, but it is within the competence of the Oudh and Rohilkhand State railway at any time to give notice to entirely cancel the agreement, such notice to expire on a date eighteen months subsequent to that on which it is given.

188. Oudh and Rohilkhand State and East Indian railways.—An agreement, dated 13th July 1907, having effect from 1st July 1907 and sanctioned in December 1907, was entered into between the Oudh and Rohilkhand State and East Indian railways for the—

- (i) pooling of coaching traffic from Allahabad, Prayag and Naini to Benares Cantonment and Kashi and *vice versa*, and the
- (ii) grant of running powers to the East Indian railway over the Oudh and Rohilkhand State railway between Moghal Sarai and Benares Cantonment for passenger trains to and from Allahabad.

In January 1908, sanction was accorded to an agreement which was entered into between the Oudh and Rohilkhand State railway and the East Indian railway for the division and routing of goods traffic between Hapur and Calcutta, Hapur and the junction stations and Hapur and the internal stations on both railways.

189. Secretary of State and Irrawaddy Flotilla Company.—An agreement, dated 1st June 1905, was entered into between the Secretary of State and the Irrawaddy Flotilla Company extending for a further period of two years, from 1st April 1905, the terms of an agreement of 31st October 1903, which was extended to 31st March 1905, for the maintenance of a regular line of steamers for the mail service between Katha and Bhamo. In May 1907 sanction was accorded to the renewal of the agreement with effect from 1st April 1907 for an indefinite period, power being reserved to both parties to terminate it at twelve months' notice.

190. Southern Mahratta railway and the Sangli State.—An agreement having effect from 1st April 1907, for a period of three years and subject to six months' notice at the end of that period, was entered into in June 1907 by the Southern Mahratta Railway Company and the Sangli State for the working, by the former, of the Sangli State railway.

A memorandum of agreement was also drawn up and accepted in 1907 by the Company and the Durbar for the construction, by the Southern Mahratta Railway Company, of the metre gauge railway, 5·77 miles long, from Miraj to Sangli town, which was completed and opened for traffic on 1st April 1907.

In the contract dated the 26th June 1908, between the Secretary of State and the Madras and Southern Mahratta Railway Company, provision has been made for this railway to be worked upon the terms of the agreement subsisting on the 31st December 1907.

191. Southern Mahratta railway and Messrs. Strick and Company.—In connection with the running by Messrs. Frank C. Strick and Company, of London, of a new line of steamers to the Port of Mormugao, sanction was given in 1905 to an agreement being executed between that Company and the Southern Mahratta Railway Company for the through booking of traffic between British and Continental ports and stations on the Southern Mahratta railway, subject to the right of the Railway Board to call on the Railway Company to terminate it on three months' notice should it, at any time, appear to them necessary to do so.

192. South Indian railway and British India Steam Navigation Company.—In June 1908 sanction was accorded to an agreement entered into between the South Indian Railway Company and the British India Steam Navigation Company for the carriage of passengers of all classes, luggage, cycles, dogs, parcels and goods booked through between stations on the Railway Company's system, including worked lines, and stations on the Rameswaram Island, *via* Mandapam and Pamban Beach and *vice versa*, until such time as through communication was established between these two places. This was effected at the end of 1908.

193. United Provinces Government and Shahdara (Delhi)-Saharanpur Light Railway Company.—An agreement, dated 11th October 1905, was entered into between the Government of the United Provinces of Agra and Oudh and Messrs. Martin & Co., on behalf of a company to be formed under the style "Shahdara (Delhi)-Saharanpur Light Railway Company," for the construction and working of a steam tramway from Shahdara to Saharanpur, with a branch from Baraut to Meerut.

RATES AND FARES.

Coaching.

194. Bhavnagar-Gondal-Junagad-Porbandar railway.—This administration enhanced the charges for 1st and 2nd class return tickets from one and two-thirds to two single fares, both in local and through booking, with effect from the 1st October 1907.

195. Concessional rates for the carriage of commercial travellers' luggage.—Commercial travellers' luggage, for which no concession rates were previously allowed when carried by mail trains, may now be so carried at half parcels rates, subject to a limit of five maunds, any excess weight being either paid for at full parcel rates or forwarded by passenger train.

196. General increase of upper class fares on certain railways.—With effect from 1st December 1909 the 1st, 2nd and intermediate class passenger fares over the North Western State railway system, (excepting the Mushkaf-Bolan and Sind-Pishin lines beyond Sibi where higher rates were already in force), were raised to the level of those obtaining on the East Indian railway. From the same date and on the same section of line ordinary return journey and six-monthly tickets were also introduced at the rates in force on the East Indian railway. With effect from 1st January 1910 the 1st and 2nd class fares for single and six-monthly return tickets on the Bombay, Baroda and Central India and Great Indian Peninsula railways were also raised to the level of those in force on the East Indian railway. On and from the same date the Oudh and Rohilkhand State railway raised their 1st and 2nd class fares to 18 and 9 pies per mile, respectively, ordinary and six-monthly return tickets being issued at the same rates as are in force on the East Indian railway.

197. Grant of return tickets at single fares to petty officers and men of the Royal Navy and non-commissioned officers and men of the Royal Marines when travelling by rail at their own expense.—At the suggestion of His Excellency the Naval Commander-in-Chief, East Indies, this was agreed to in 1906 by all railways except three of the smaller ones.

198. Mirpur Khas-Jhudo railway.—In June 1909 sanction was given to the same maximum rates being charged for the conveyance of passengers and goods on the Jhudo Branch line as are in force on the Jodhpur-Hyderabad (British section) railway, but calculated at a mileage 50 per cent in excess of the actual mileage, the minimum rates approved being the same as those in force on the Jodhpur-Hyderabad (British section) railway calculated on the actual distance.

199. Railway facilities for importation of labour to the Tea Districts.—In order to improve and facilitate the supply of labour from the cooly recruiting districts to the tea gardens in Eastern Bengal and Assam, the East Indian and Eastern Bengal State railways arranged in 1906 to attach a through carriage daily between Asansol and Goalundo, solely for the convenience of tea garden coolies. The East Indian railway also reduced their third class fares to $1\frac{1}{2}$ pies per mile from stations *via* Naihati for coolies carried 100 miles and over.

To further facilitate the importation of labour to the tea gardens in Eastern Bengal and Assam, the credit note system was introduced on the railways mentioned in the margin, and the undermentioned Railway Administrations notified in 1907 the following reductions in their fares :—

Eastern Bengal State railway.—to $1\frac{1}{2}$ pies a mile from *viā* Naihati to *viā* Goalundo and *vice versa*.

Assam-Bengal railway—to $1\frac{1}{2}$ pies a mile—(a), from, or *viā*, Gauhati to stations on the Gauhati-Tinsukia section and *viā* Tinsukia and *vice versa*, and (b), from, or *viā*, Chandpur to stations Itakhola to Tinsukia including Silchar and Gauhati branches, and *viā* Tinsukia and *vice versa*.

Bengal-Nagpur railway—to $1\frac{1}{2}$ pies per mile over that line.

Goods.

200. Bengal-Nagpur and Madras and Southern Mahratta railways.—With a view to enabling these railways to compete successfully with the sea-borne and canal traffic, they were permitted to adopt the $\frac{1}{10}$ th pie per maund per mile minimum rate for all goods (except dangerous goods or explosives and excepted articles) booked to and from any stations on the North-East line, including the Cocanada branch.

201. Competitive rates for goods traffic from Northern India to Bombay and Calcutta.—As a result of the agreement come to between the Great Indian Peninsula and East Indian railways in respect to the difference which should be maintained in the rates to and from the ports of Bombay and Calcutta for traffic to and from Northern India, both railways practically reverted in 1906 to the rates which were in operation before the competition which followed the termination of the agreements dated the 7th February 1898 and 19th July 1903.

202. Concessions to traders on goods despatched to, as well as on those coming from, Persia.—A rebate was allowed in 1901 by the North Western State railway equal to one-third freight on goods booked from Karachi and stations in the Punjab to Quetta *en route* to Persia, *viā* Seistan and *vice versa*, on presentation of a certificate from the Agency office at Quetta. On such traffic carried over the East Indian railway a similar concession was granted by that railway. As, however, this concession proved insufficient to induce Persian merchants to patronise the Quetta-Nushki route, the rebate was increased in March 1906 to two-thirds the freight charged over the North Western State railway, the concession to remain in force for a period of three years subject to reconsideration at the end of that period. Later sanction was accorded to the extension of the rebate of two-thirds freight to such traffic when it was booked and despatched by passenger train, and to both these concessions being extended to Afghan trade which passes through Nushki and does not break bulk at that station. A similar concession, but limited to one-third rebate, was sanctioned on the Oudh and Rohilkhand State railway. Both these concessions were sanctioned up to 31st March 1909, and in February 1909 their continuance for a further period of 3 years was approved.

East Indian.
Bengal-Nagpur.
Assam-Bengal.
Eastern Bengal State.
Bengal and North-Western.

203. Concessional rates for the carriage of fodder.—In view of the prospects of a serious fodder famine in 1907-08, owing to the failure of the monsoon, in the United Provinces, Central India, Rajputana, the Punjab and the North-West Frontier Province, and of the adverse effect on the traffic of the railways which would result from curtailed agricultural operations following on any considerable mortality among cattle, the Government of India invited the Railway Administrations to co-operate by the quotation of specially reduced rates for the carriage of fodder to the famine-affected parts of the country. Substantial reductions in rates were, as a result, agreed to by the several railways ; but the Government of India, realizing that still greater assistance was necessary in order to effect the movement of fodder in sufficiently large quantities, decided that freight on such consignments should be charged at the rate of $\frac{1}{2}$ an anna per 4-wheeled wagon and one anna per bogie wagon per mile only, the balance of the total freight being borne by Government. This arrangement came into effect from the 15th November 1907.

Subsequently the Government of Bombay having represented that similar famine conditions prevailed in the Ahmedabad, Kara, Panch Mahals and East and West Khandesh districts and the Baroda State, which border on Rajputana and Central India, the concessions referred to above were extended to consignments of fodder booked to stations in these districts.

The above concessions remained in force until the end of July 1908, when they were withdrawn owing to the improvement in the agricultural outlook.

204. East Indian, Oudh and Rohilkhand State and Bengal and North-Western railways.—In 1909, owing to the disappearance of famine conditions, the low grain rates quoted for Burma rice to stations on the East Indian, Oudh and Rohilkhand State and Bengal and North-Western railways were cancelled and the old rates in force previous to the famine were reverted to.

205. Jodhpur-Bikaner railway.—With effect from the 1st December 1906 the scale of class goods rates on the Bikaner section of this railway was reduced to the same level as that in force on the Jodhpur section.

ACCIDENTS.

206. With a mean average of 29,662 miles worked per year and a total of about 602 millions of train-miles run during the five years from 1st January 1905 to 31st December 1909, there were 293 accidents to trains, rolling-stock, permanent-way, etc., on Indian railways for every 1,000 mean-miles worked per year and 7 accidents for every 100,000 train-miles run.

The proportion of passengers killed and injured by accidents to trains from causes beyond their control to the number of passengers booked during the same period was 1 in 7 millions and 1 in $1\frac{1}{4}$ millions, respectively; and of passengers killed and injured from all causes, 1 in $1\frac{1}{2}$ millions and 1 in 5 hundred thousand, respectively.

The proportion of total casualties (passengers killed and injured from all causes) to the number booked was 1 in 4 hundred thousand; and to the number of passenger units carried one mile, 1 in 14 millions.

207. During the period November 1905 to 31st July 1910 the following were the more important accidents:—

Bengal and North-Western railway.—On the 11th February 1910 No. 181 up goods train ran into a detachment of Goorkha sepoys while they were manoeuvring on the line at the Kura bridge. Three men were killed and three more or less seriously injured.

Bombay, Baroda and Central India railway.—No. 5 down express train collided with No. 47 down goods train at Itola station, on the 26th June 1908, due to the driver of No. 5 down train having run against signals and to the disregard of rules by the station staff. Twenty-four passengers and two railway servants were killed, and thirty-four passengers and five railway servants injured. The rolling-stock was considerably damaged.

No. 2 up mail train collided with No. 156 up local train between Parel running-shed and Mahalakshmi station, on the 18th March 1909, owing to the cabinman at Parel running-shed having lowered signals for the mail before receiving information of the arrival of the local train at Mahalakshmi. Eight passengers and five railway servants were injured.

Burma railways.—The whole of No. 239 up passenger train, with the exception of three vehicles, was derailed on the night of the 24th March 1909 on a diversion at mile 140-19 between Zeyawadi and Nyaungchidauk stations. The accident was due to the absence of a light to indicate the entrance to the diversion, a contributory cause being the excessive speed of the train, contrary to the orders on the "Line-clear and caution ticket" given to the driver. The first fireman, a brakesman off duty and seven passengers were killed; the driver and seven passengers were seriously, and seven persons slightly, injured. The damage to rolling-stock was estimated at Rs. 77,000. One horse-box, four third class bogie carriages and two third class bogie carriages with brake-vans were completely destroyed by fire which resulted from the accident, and the engine was seriously damaged from the same cause.

Eastern Bengal State railway.—An up goods special train parted between Ichhapur and Shamnagar stations on the 10th November 1907. The

portion left on the road was run into by an up troop special of the East Indian railway, owing to the staff at Shamnagar having permitted this train to enter the blocked section. The collision fouled the down line, and the wreckage of the two trains was run into by a down special goods train running on that line. The driver of the troop special was killed and a passenger injured. The rolling-stock and permanent-way were considerably damaged.

Two ballast trains collided between Raja Bhat Khawa and Buxa Road stations on the 30th March 1909, owing to disregard of rules for train working while telegraphic communication was interrupted. Five coolies were killed and five injured. The rolling-stock was badly damaged.

East Indian railway.—Nos. 18 down passenger and 131 up goods trains collided at mile 864 $\frac{7}{8}$, between Sasni and Pali (now called Madrak) stations, on the 31st January 1906, due to the driver of the goods train running with a wrong Line-clear message which had been delivered to him by mistake at Sasni. Two passengers and five railway servants were killed and four passengers and two railway servants injured. The rolling-stock and permanent-way were considerably damaged.

Nos. 8 down passenger and 256 down goods trains collided at Memari station on the 9th May 1906, due to defective signals. Seventeen passengers were injured. The rolling-stock and permanent-way were considerably damaged.

A special train collided with a shunting engine at Dhanbaid station on the 12th March 1907, due to the disregard of rules by the station staff. Twenty-two passengers in the special were more or less seriously injured, one of whom subsequently died. Three men of the engine staff also received injuries of a slight nature. The rolling-stock was considerably damaged.

Nos. 18 down passenger and 61 up goods trains collided between a temporary block hut at mile 230-6 $\frac{1}{4}$ and Dadpur block hut on the 17th December 1907, due to the failure of the staff to give a caution order to the driver of the up goods train at Jhajha. Eight third class passengers were killed and eighteen injured. The guard of the goods train was also slightly injured. The rolling-stock was considerably damaged.

No. 64 down goods train collided with No. 73 up goods train at Patna station on the 30th March 1908, due to the disregard of rules by the station staff. Certain wagons on the up train which were loaded with kerosine oil caught fire, and the blazing oil having splashed on to the engine of the down train burnt three of the engine crew, who subsequently succumbed to their injuries. The permanent-way and rolling-stock were considerably damaged.

No 33 up passenger train collided with No. 6 down express passenger at Rasulabad station on the 21st June 1908, owing to the points having been wrongly set. Four passengers were killed, and fourteen passengers and five railway servants injured. The rolling-stock was considerably damaged.

No. 12 down passenger train collided with a down light engine at Twin-ganganj station on the 9th June 1909, owing to the assistant station master on duty having given the Line-clear for the down passenger train while the line was blocked by the light engine. One railway servant was killed and four passengers and seven railway servants were injured. The rolling-stock was considerably damaged.

The engine, and the first four wagons immediately behind it, of No. 64 down goods train were capsized over the bridge and two other wagons derailed at mile 119.5 near Sainthia station on the 14th June 1909, owing to a rail from the end of the bridge having been removed in the course of repairs to the permanent-way by the engineering department without the exhibition of proper signals, and to the station staff at Sainthia having failed to advise the next station of the work having been taken in hand. Three railway servants were injured and the rolling-stock was considerably damaged.

Great Indian Peninsula railway.—Nos. 601 down Great Indian Peninsula railway mail and 225 up Oudh and Rohilkhand State railway goods trains collided at Amausi station, Oudh and Rohilkhand State railway, on the 5th June 1907, due to the driver of the Great Indian Peninsula railway train running against signals. The brakeman of the mail train was killed, and twelve passengers were severely injured, one of whom subsequently died. The rolling stock and permanent-way were considerably damaged.

Madras railway.—Nos. 14 mail and 4 mixed trains collided near mile 112, between Urampadu and Koduru stations, North-West line, on the 11th May 1906, due to neglect of the staff. One passenger and three railway servants were killed and twelve passengers and three railway servants injured.

Madras and Southern Mahratta railway.—The engine attached to a ballast train, while proceeding from Veldurti station to Bhogavolu station, on the 19th March 1909, left the track at mile 10.4 and capsized down the bank slope, owing to the driver having exceeded the speed limit. Six contractor's coolies were killed and ten injured.

The whole of No. 2 up Calcutta-Madras mail train, with the exception of two vehicles and the engine, was derailed on the forenoon of the 19th June 1909 at mile 13.4 between Ennur and Minjur stations. The accident is believed to have been due to a defect in the road. Seven passengers were killed on the spot, eight subsequently died from injuries and fifteen were injured. The damage to vehicles was considerable, four of them being completely wrecked.

On the 6th January 1910 No. 66 up express running from Waltair to Duvvada ran over and killed thirteen persons who were trespassing on the line at night. The driver noticed nothing unusual; but on arrival at Duvvada his attention was drawn to some cloth on the cow-catcher, which led to the examination of the line and the discovery of the dead bodies.

North Western State railway.—No. 4 down Punjab-Bombay mail and an up troop special collided near Lahore station on the 1st December 1905, due to points having been wrongly set. Seventeen passengers were injured. The rolling-stock was considerably damaged.

An accident occurred on the Reshi Bridge on the 26th June 1907, when a passenger train overtook eight women and five children who were trespassing on the bridge, and killed seven women and injured one woman and two children.

A collision occurred between an up passenger and a down goods train, on the 24th October 1907, at Kot Lakhpat station, due to the driver of the goods train having started on a wrong Line-clear, and resulted in the loss of eleven lives and injuries of a serious nature to twenty-nine passengers and railway servants.

A collision occurred between a down special goods train and an up passenger train on the 29th October 1907 between Jagadhri and Kalanour stations, due to the driver of the goods train having run through Jagadhri station yard without Line-clear and against signals. Twenty-two persons, including thirteen railway servants, were killed, and twelve persons, including six railway servants, were injured.

A collision occurred between an up and a down passenger train on the 25th December 1907 between Ludhiana and Ladhawal stations, due to the station master having permitted the down passenger train to proceed when the section ahead was not clear, and resulted in the death of twenty-one persons including six of the train staff, and injury to seven persons including four of the train staff.

No. 3 up mail train collided with No. 4 down mail train at mile 1,029, between Mustafabad and Barara stations, on the 3rd December 1908, due to a Line-clear having been given for No. 4 down mail after permission had been given for No. 3 up mail to proceed in the opposite direction. Fifteen passengers and seven railway servants were killed, and twenty passengers and four railway servants injured. The rolling-stock was seriously damaged.

Oudh and Rohilkhand State railway.—No. 23 up passenger train collided with No. 26 down passenger at mile 84-7, between Dasna and Ghaziabad stations, on the 6th May 1908, owing to both trains having been allowed on to the same block section at one time. Seventy-two passengers and seven railway servants were killed, and one hundred and eighteen passengers and one railway servant injured. The rolling-stock was seriously damaged.

No. 39 up express train and a rake of 14 wagons and 3 brake-vans belonging to No. 195 up goods train, which escaped from the yard at Doiwala station, Hardwar-Dehra railway (worked by the Oudh and Rohilkhand State railway) during shunting operations, owing to the brakes on the rake not having been secured on the train coming to a stand-still at the station, collided at mile 34-7 between Doiwala and Rikhikesh Road stations on the 23rd May 1909. Six passengers and two railway servants were killed, five passengers were seriously injured and six passengers slightly injured. The damage to rolling-stock was estimated at Rs. 1,00,261.

Rohilkund and Kumaon railway—A down locomotive fuel special and an up ballast train collided at mile 52-11, between Lalkua and Motta Haldoo stations, on the 23rd September 1906, due to the ballast train, which was working outside the down distant signal at Lalkua, not having been properly protected. One person was killed and twenty-two injured. The rolling-stock was considerably damaged.

On the 27th March 1910 a loaded boulder train, with engine travelling tender foremost, was derailed between Bhojeeputra and Deoranian stations. The engine, tender and some vehicles fell over the bridge into the stream below. A wagon containing fuel for the engine, an intermediate and third class carriage in which the spare crews of the train travelled, the front brake-van, five wagons and open trucks were all derailed on the bridge. The driver, two firemen, two khallasis and a telegraph employé were killed. The accident was probably due to the rails having buckled underneath the engine tender.

South Indian railway.—On the 11th December 1909, as No. 196 passenger train, with a bogie composite leading, was ascending from Ketti towards Lovedale station on the Nilgiri mountain branch, it collided with a light trolley which was descending at a high rate of speed. The trailing wheels of the leading bogie were derailed at the impact, and the Locomotive Foreman and the Assistant Locomotive Superintendent, who were passengers in the trolley, were killed. The trolley was in charge of another Locomotive Foreman and two trolleymen, who were all more or less seriously injured. The accident was due to the Locomotive Foreman in charge of the trolley having overlooked the running of the daily passenger train.

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